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Ellis Silas

[*See p.* 169]

THE BOOK OF POLAR EXPLORATION

BY

E. L. ELIAS M.A.

AUTHOR OF
"ABRAHAM LINCOLN" ETC.

WITH A FOREWORD BY

R. E. PRIESTLEY M.C.

FELLOW OF CLARE COLLEGE CAMBRIDGE
GEOLOGIST TO THE SHACKLETON EXPEDITION OF 1907–9
AND TO THE SCOTT EXPEDITION OF 1910–13

WITH ILLUSTRATIONS IN COLOUR
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TO
MY FATHER

FOREWORD

THE Polar regions have, since very early times, held a unique fascination for the mind of man. Their wastes of ice and snow, the length of their unbroken day and night, a flora and fauna absent or peculiar to themselves, their distance, and their position have all tended to set them aside in frames of their own. This sense of 'difference' is heightened in the scientist, and in the explorer himself, by the fact that in the past the Polar conditions have not been the same, thus isolating the Poles as we know them both in space and time. When our own great coal measures were being formed, or shortly afterwards, speaking in terms of geological time, the Poles also were surrounded by forests, and many parts of the Polar regions were covered by swamps in which the mother material of coal was collecting. At other times, when parts of Europe, America, Africa, and even India and Australia, were swathed in great ice carapaces, the Polar regions enjoyed a salubrious climate in which again great forests flourished, and floras later to spread over a great portion of the world probably had their birth about the Poles. So far as we can ascertain, the present icy conditions of the Poles are the exception and not the rule. Yet man is naturally obsessed with the things actually within his own experience, and the Poles will always be associated in his mind with eternal snow and ice. To the writer's mind, the present conditions are yet more piquant and interesting because of the fact that they may be unique, and, once the facts are realized, this will probably be true of many other readers who take up this book.

Besides, the history of Polar exploration is full of movement and fascinating detail, and of lessons to be learnt. The struggle to find a commercial route to the East *via* the North is an absorbing phase, yet only one phase, of the work which has narrowed the unknown land and sea about the North Pole. The drama of the rise of the northern whaling industry, and its fall as the greed of man exterminated his quarry, is followed by the more modern picture of the extension of the same adventurous livelihood in the South, accompanied—to modern man's credit be it said—by the attempt to find some solution of the problem of the preservation of the whale. But the South also has been ravaged by intemperate man, with the consequent extermination of the fur seal. Exploration and exploitation of the Poles have gone hand in hand, by different methods, but with marked success in both cases. Examples of the latter have been the colonization of Greenland, first by Eric the Red, later by the Danes; the establishment of headquarters of the whaling industries beyond the Circle in both hemispheres; the tearing of the gold from the frozen gravels of Alaska and the Yukon. The earliest of all was the adoption of Polar lands as a home by the Eskimo, Lapps, Samoyedes, and other Northern tribes: the latest has been the building up of important reindeer-beef industries and fur farms. Yet in the opinion of some authorities the exploitation of the Poles has only just begun. From this point of view alone the study of these regions is worth while to civilized man.

In the past the Polar regions have served in times of peace as a training-ground for naval personnel: after great wars the ranks of Polar explorers have received many of their best recruits from the surplus of mariners and fighting men released when peace had diverted the energies of the nations to more productive channels.

Foreword

Ships of war, strengthened to resist shell-fire or to stand the shock of the discharge of heavy mortars, have made excellent weapons to attack the ice-infested seas. At the present time, when internationalism gains ground and the League of Nations points the way to an era when war will be a memory only, regions about the Poles yet untraversed will provide an outlet for much of the energy of restless spirits, whose activities might otherwise cause unrest: the detailed exploration of country partly known, and the exploitation of regions known but not developed, may well occupy the energies of nations for many years, and so serve to prevent a clash in the difficult period of transition. Of the unexplored and undeveloped portions of the earth those about the Poles are by far the greatest, and not necessarily the least valuable, since the power of man to deal with unfamiliar conditions increases by leaps and bounds as physical science provides new weapons. As an example of what may be achieved we can point to the fact that international rivalry has long been replaced by international co-operation in these fields. The nations, since the middle of the nineteenth century, have worked hand in hand in the endeavour to wrest the secrets from Nature's last stronghold. There has been rivalry, and fierce rivalry, between expeditions, but this has mainly been a matter of individual leadership, though where nationality has been different the leaders' countrymen have naturally taken sides. Taken as a whole, it can be fairly claimed for Polar exploration that it has made its contributions to the cause of international peace and understanding. Did not the *Endeavour* proceed south unharmed in 1914, and the Shackleton Expedition work out its fate without disturbance in history's greatest war?

To those of us who have had the good fortune to travel south or north the 'call' of the ends of the earth is a very real, if also an indefinable thing, made up perhaps of a little of all the things mentioned above and of many more. But perhaps the greatest single factor is a sense of comradeship in a great and common cause, which was never recaptured even in the turmoil of the Great War, when millions experienced comradeship of an order and intensity never met with in ordinary life. The isolation and 'difference' of the Poles help. It is a fine thing to be a member of a small and carefully chosen party, working toward a common goal which is also an ideal, bound together by bonds which the very nature of the environment strengthens, and by loyalty to a commander whose outstanding qualities and fitness for his post are only emphasized by each emergency as it arises. The ties commence to form before the ship casts off from the wharf, for public interest has long focussed upon the adventurers, and has isolated them spiritually even in the midst of friends and relations. They are strengthened by the discomfort of the voyage through stormy seas on an overburdened and apparently ridiculously inadequate ship. The hurry and incessant physical toil of the hasty landing follow, with the ship's company straining every nerve for their comrades who are to remain behind. During the long winter, with its perpetual night, groups of friends form, and the wise leader utilizes these cliques in building up the sledge parties for the cold and difficult work of the coming spring. At the close of this preliminary campaign some readjustments will need to be made, but the friendships that survive have bonds comparable with tempered steel. Should catastrophe intervene, the last ties are forged, and we have many Arctic and Antarctic cameos of men going down to death cheerfully in company, each denying himself to alleviate the plight of his comrades. Still more admirable, though less poignant, are the memories of those incidents which have had more happy endings, and have given back to the world a group of men with perfect confidence in each other. After such a trial the members of a party of which the writer was a member were described by the rest of the expedition as being "as thick as thieves." No wonder Polar explorers seek each other out at every opportunity in civilization, whether they are old comrades or not! The talks that follow such meetings raise memories that go far to make a more complicated life worth living at its worst moments. In like manner the story of Polar exploration cannot but attract and encourage the reader who has not had the good fortune to share its adventures and to live amid the unique and beautiful blue and silver setting of the Poles. Here we have that story told with enthusiasm by one who clearly appreciates the beauty and interest of the world about which she writes. The book cannot, of course, pretend to be a complete history of Polar exploration, but it may be commended to all who need to be taken out of themselves for a short time, to return to work with renewed energy and courage.

There is much in the modern thesis that the adventures of the Polar explorer are but the results of his mistakes. It is not the whole truth, but it has some ground beneath it as a base. Nevertheless, among the incidents which have made Polar exploration worth while must be numbered the very disasters which may have happened through failure to measure up to a harsh environment. The Scott and Franklin tragedies will be remembered long after many successful adventurers have been forgotten. The shortcomings of men when they are alive—and none are perfect—cannot be better balanced and erased than by a glorious death. We know little about the end of Franklin and his men, but Scott and his companions died under circumstances which can be traced step by step. Their example did more for Britain and the Empire than complete success could ever have achieved. Comrades, countrymen, and competitors alike, when prejudice is set aside, must all agree that no more clear-cut example of the heights to which mankind can rise in face of the final emergency has ever been presented. Flashing forth as it did in dramatic circumstances before the youth who within a few short years were to be plunged in the greatest conflict the world has ever seen, it had a value even transcending that it would have had in normal times. Five men, dying as men should when necessary, and sometimes can, did more for their country's cause than thousands dying, often as well, amid the fog of war. Who shall say that these, or any other lives lost in the North or South, were wasted ?—far less the effort and money, which have been, after all, relatively small compared with the results achieved.

R. E. PRIESTLEY

CLARE COLLEGE
CAMBRIDGE

PREFACE

IN this work I have endeavoured to tell, graphically and with sufficient detail, the story of the more important Polar expeditions. It will be obvious to those who have any knowledge of the extent of Polar exploration that in a book of this size and scope there must be many omissions. Particularly will this be so in the long tale of the nineteenth-century expeditions and of the explorers of Greenland. Nevertheless I have, I hope, included all the attempts, Arctic and Antarctic, that the reader will wish to find dealt with.

In addition to *The Geographical Journal*, the organ of the Royal Geographical Society, the principal books upon which I have drawn in writing this brief account of Polar exploration are: Richard Hakluyt's *Principal Navigations, Voyages, and Discoveries of the English Nation*; *Purchas His Pilgrimes*; *The Siege and Conquest of the North Pole*, by George Bryce; *My Arctic Journal*, by R. Peary; Sir W. E. Parry's *Voyages*; *Peary*, by Fitzhugh Green; *Narrative of a Journey to the Shores of the Polar Sea*, by Sir John Franklin; *The First Crossing of Greenland* and *Farthest North*, by Fridtjof Nansen; *A Narrative of the Discovery of the Fate of Sir John Franklin and his Companions*, by Sir F. Leopold M'Clintock; *The Discovery of the North-West Passage*, by Sherard Osborn; *The Polar Hunters*, by Dr Rolt Wheeler; *My Life with the Eskimo*, *The Northward Course of Empire*, and *The Friendly Arctic*, by Vilhjalmur Stefansson; *The People of the Polar North* and *Greenland by the Polar Sea*, by Knud Rasmussen; *Polar Exploration* ("Home University Library"), by Dr W. S. Bruce; *The Heart of the Antarctic* and *South*, by Sir Ernest Shackleton; *Historical Introduction to Sir Ernest Shackleton's "Heart of the Antarctic"* and *The Siege of the South Pole*, by Dr H. R. Mill; Captain Cook's *Voyages of Discovery*; *The First Flight Across the Polar Sea*, by Roald Amundsen and Lincoln Ellsworth; *My Polar Flight*, by Roald Amundsen; *Voyage of Discovery in Southern Regions, 1839–43*, by Sir James Ross; *The Land of the North Wind*, by Dr John Rae; *The Voyage of the Discovery*, by R. F. Scott; *Scott's Last Expedition*, arranged by Leonard Huxley; *South with Scott*, by Edward R. G. R. Evans; and *From Edinburgh to the Antarctic*, by W. G. Burn Murdoch. I have consulted also the comprehensive article, "Polar Regions," by Sir Clements Markham in the ninth edition of the *Encyclopædia Britannica*.

I wish to express my warm thanks to Mr Raymond Priestley, the explorer and geologist, who read my manuscript and made many valuable suggestions.

E. L. E.

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THE BOOK OF POLAR EXPLORATION

INTRODUCTION

CURIOSITY is a quality common to most men. With some it finds expression in mean desires. These men poke and pry into the privacy of others; at all costs they must know their neighbours' business.

There is, however, a divine curiosity also, which expresses itself nobly. It is curiosity of this sublime order that forces men out of comfort and security into the hardships and dangers of the unknown, for the sake of—what?

This question can be answered in many ways. Shelley calls it "The desire of the moth for the star." Rudyard Kipling sees in it the pursuit of "Something hidden; go and find it." Longfellow exclaims, "Excelsior!" and Walt Whitman, flourishing an expressive hand, says:

> O to die advancing on! . . .
> Pioneers! O pioneers!

It is plain that the poets, at any rate, are on the side of adventure; and, however differently they may sing, they unite in a common understanding of this profound impulse in man—an impulse that we may safely say will last as long as man himself. For should the race ever lose this heritage it will die. No matter how great its wealth or how advanced its civilization, without some such impulse behind it mankind will be spiritually lifeless. Men will then be no better than Robots, creatures of mechanical contrivance.

Now there is nothing that stimulates curiosity so much as opposition. Even in trivial matters this is so. Bluebeard, handing his wife the key with the order not to make use of it, knew very well that by doing this he was putting into her mind a desire to explore the locked-up chamber.

And so it is with the greater things on which that nobler kind of curiosity expends itself. The greater the obstacle the more fiercely does enthusiasm burn to overcome it. Every explorer knows this to be true. And not only is he prepared for opposition, but he welcomes it.

It is well that this should be so, for no sooner has the explorer conceived of his scheme than he finds himself face to face with difficulties. There are no funds for the expedition which seems to him so desirable; sympathy is lacking; there may even be active hostility to his plans; or he hears of a rival who is seeking to outrun him.

Above and beyond the obstructions which are not insuperable there looms for him a persistent obstacle—the elements. We have invented marvellous machinery; we have perfected equipment; we have made a science of the health of the human body; every weak spot has been examined; every contingency has been considered. And yet the winds still blow, the seas still rage, floods rise, snow falls, rain beats upon us, and we are helpless. Man venturing out of the security of his home must oppose forces which he cannot master. Divine fingers alone can control these fierce disturbers of the universe—these winds that blow where they list, these torrents that sweep away both man and his dwelling, these blizzards that blind and kill. This sense of the impotence of man when he is set upon errands that must bring him into collision with elemental forces is part and parcel of the explorer's make-up. From Noah in his ark to Lindbergh in his *Spirit of St Louis* there can be no one who has travelled through solitary places without realizing that man is very small, and that the forces against him are very great.

And yet the wonder of it! Man still strives after the unattainable. For, though the unattainable may be for ever beyond reach, it is always within vision; and by vision we are kept alive.

PART I
THE ARCTIC

Before the world, was God.

Watchword of Frobisher's Expedition, 1577

Now may He Who loves adventure, and Who ever leads the venturesome, go before us in this renewal of our faith in Him and in our fellow-men.

Extract from prayer used by the Bishop of
Liverpool at the dedication service of
Liverpool Cathedral, July 19, 1924

CHAPTER I

THE FIRST STEP NORTHWARD

AMONG the earliest of all Arctic explorers were men from Norway. A glance at our map will show why this was a natural happening. The North Polar regions occupy the space that is enclosed by the Arctic Circle, the line of which runs round the globe in latitude 66½° N. at a distance of 1408 miles from the Pole itself. Into this circle the continents of America, Europe, and Asia all poke their heads, with the result that at a comparatively short distance from the Pole there are highly civilized lands, which form as it were a bodyguard round the mysterious North. So closely, indeed, does this ring of land press upon the North Polar regions that the three continents almost join, and there are only three openings by water into what we may call the Magic Circle. One of these openings is Bering Strait, situated between Alaska and Siberia; the second is Davis Strait, that great waterway leading up from North America to Baffin Bay; the third is the North Atlantic Ocean and the Greenland Sea. Through one or other of these three waterways any approach by ship to the North Pole must be made.

True, the North Pole has now been reached by air, and the old mariners' toil of years has been compressed into days, but that does not in the least detract from the heroism of those who fought their way northward at a time when, in order to penetrate into the North Polar regions, an approach had to be made by sea.

Of the three doorways the Bering Strait is much the least wide, measuring only forty-five miles at its narrowest point. Sir Clements Markham says graphically, "Out of the whole ring of 8640 miles along which the Arctic Circle passes about 900 is over water. This great environment of land is an important feature in the physical condition of the north polar region." It is also one of the reasons why these regions were explored at so much earlier a date than those of the South Pole. The land adjacent to the Arctic Circle affords many points from which a start may be made, and this brings the region much more closely in touch with the rest of the world.

ICE-CLIFFS WITH BIRDS
From Kane's "Arctic Explorations"

How many centuries it is since men first got an idea that far up in the North there was undiscovered land we cannot be certain. But as far back as the fourth century B.C. there was one Pytheas, who spoke of an unknown northern region, which he called Thule. This first among all known Polar explorers was a Greek navigator and astronomer, who himself voyaged hopefully, with an eye ready to scan whatever he might see either in the heavens above or in the waters beneath him. In his voyaging he cruised round Britain, and no doubt he touched at the Orkneys, the existence of which led him to speculate further about a still more northerly ice-bound region.

This region of Thule, he declared, was probably only some six days distant from Britain—a calculation which, of course, was very wide of the mark. Pytheas' mistake probably sprang from another of his errors, his idea of the size of Britain, which he imagined to be immensely bigger than it is.

If Britain had really been as huge as Pytheas thought it, then the Arctic regions might quite easily have been only some six days' journey away. Had he been able to continue his voyaging for those six days of which he talks, he would soon have discovered his mistake, but he was forced to give up further investigation, having reached, as he says, a region in which there was "no longer any distinction between the air and earth and sea, but a kind of mixture of all three, forming a substance resembling a gelatinous mollusc, which rendered all navigation . . . impossible."

This is not a bad description of summer conditions in Arctic Seas. The sea-borne pieces of sea- and land-ice, often black with dirt, are very like floating bits of land; the slush which accompanies their melting gives a soupy or even jellylike aspect to the sea; the mist which so frequently overhangs all causes the boundary between air and sea and land to be yet more indefinite. Pytheas' language is indeed not unlike that of quite recent explorers. "The water," says Dr W. S. Bruce, "is, indeed, 'gluey.'" So that at the end of the nineteenth century the sea was even as it had been in the fourth century B.C.—gluey!

Pytheas died, and the world rolled on its way, producing from time to time inquiring souls who speculated as to the geography of the globe. Some of these proceeded from speculation to action; others merely wrote learnedly but vaguely from the seclusion of a cloister. Meanwhile Britain was passing through the hands of successive conquerors, and was far too much concerned in making her own history to trouble about possible, or impossible, lands in the North. In these early days there were legends of the North and of voyages thither, but the majority of these, with the exception of those telling of Othere's hunting and trading voyages in the time of Alfred the Great, had no greater substance than the legends about Cathay, that marvellous dream-country of the East, which hung in the popular mind as the Land of Bliss, where would be found everything that man could desire. This land of spices and precious stones early fascinated the imagination, and it was only later and by slow degrees that men were allured by dreams not of spices and jewels, but of ice and snow; not of a country of ease and plenty, but of a land of hardness and hunger. At first it was not the desire to conquer ice that moved these early seamen: ice was the barrier that stood in the path to wealth, to happiness, to bliss.

We have captured a China pilot, his charts, and his golden keys ;
We'll sail to the Golden Gateway, over the golden seas.

What shall we see as we sail there ? Clusters of coral and palm,
Oceans of silken slumber, measureless leagues of calm,
Islands of purple story, lit with the westering gleam,
Washed with the mystic whisper, dreaming the world-wide dream.[1]

While Britain was still busy with her own affairs Norsemen were already engaged in exploring Iceland and Greenland. They had colonized Iceland in the ninth and tenth centuries, and were well established in Greenland shortly after. An ancient monument, or runic stone, found there, bearing the date 1235, proves quite certainly that Norsemen had explored far north along the west coast of Greenland before Chaucer was born.

These prosperous beginnings came, however, to an untimely end. The removal of the seat of government to Copenhagen, the sacking of the northern ports by the fleets of the Hanseatic League, the decimation of the

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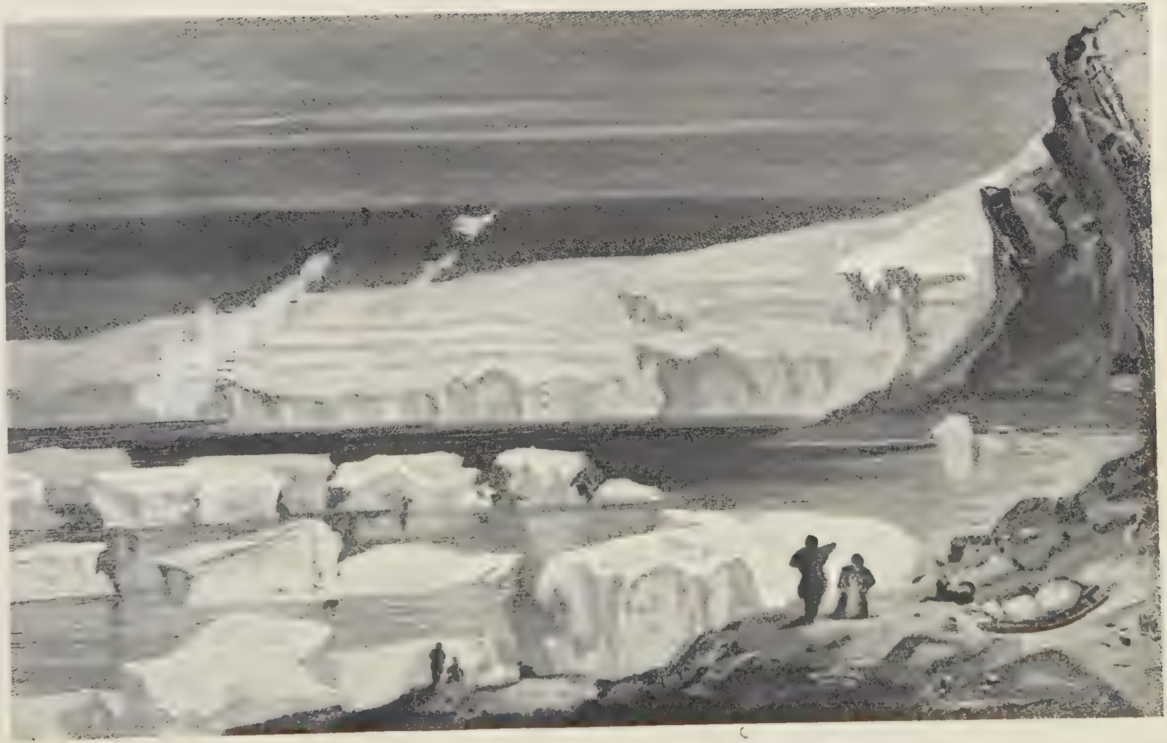
[1] Alfred Noyes, "The Golden Hynde," in *Forty Singing Seamen.*

A SCENE IN THE ARCTIC

From a sketch drawn in 1855 by Dr E. K. Kane



THE GREAT HUMBOLDT GLACIER, PEABODY BAY

From a sketch drawn in 1855 by Dr E. K. Kane peoples of Europe by the Black Death in 1347, and the conversion of the Greenland trade into a royal monopoly combined to cause a falling off in traffic with the northern colonies. In the late fourteenth and early fifteenth centuries communication between Norway and Denmark and Greenland waned rapidly and finally died, leaving the settlers isolated. As a result of this calamity, the colonists, cut off from essential supplies and reinforcements from home, and situated so far north and in such a trying climate, died from want or deteriorated in body and mind until the last survivors were absorbed into, or destroyed by, the invading tribes of strange, dark, short, muscular Eskimos who took their place. These newcomers spread along the coasts of Greenland, mainly on the south and south-west of the island, but never ventured more than a few miles inland. Their instinct to hug the coast is very easy to understand, for, though there is some vegetation along the coasts of Greenland, the interior is one unbroken field of ice. In summer and in winter it is just the same. In the warmer weather the upper layers of snow will melt and form large pools of water, but the great mass of ice remains unaffected, a vast reservoir of stored-up cold defying the darting beams of the sun.

And so Greenland, in the interior, presents no landscape to the eye—no green hills and flowery valleys, no little hamlets, no farms, no shepherds, no country labourers, no fields of corn or vegetables, no hillocks full of rabbit holes, no vegetation of any kind. It stretches in one great, silent, triumphant field of ice, several thousand feet above sea-level, ascending now and again into yet higher snow-covered domes, with here and there a peak or a range of peaks towering above the general level like colossal fingers pointing to the sky. The most striking, the most terrible thing about the scene is its sameness, and the height of the main plateau, terrific in its extent, dominates supposed that people brought up in Norway or Iceland would know how to deport themselves in really cold weather, for they do not meet cold weather in their own countries."

Nansen, on the other hand, in his *Farthest North* makes allowances for British explorers in the Polar regions on the ground that, unlike Norwegians, they have no real experience of cold in their own country. So that in considering Stefansson's very attractive theory it must be borne in mind that, while Nansen pities the British explorer because of his ignorance of cold, Stefansson pities Nansen for a similar reason.

Bearing this in mind, Stefansson's arguments for encouraging trade centres in the extreme North are very powerful. He says:

> We are conquering the difficulties of the North faster as time goes on. . . . The growth of grass and other plants is measured not by the length of the summer in months but by the number of hours of sunlight, and . . . there are as many hours of sunlight in three months of Arctic summer as in five months of a tropical summer, giving the northern plants, therefore, in reality almost twice as long a growing time as the careless reasoner assumes them to have.
>
> It seems to be light rather than heat that makes a plant grow fast. But if it were heat, the Polar plants would not be badly off. A fairly simple mathematical calculation shows that from the first week of June to the second week of July the earth receives from the sun more heat per square mile per day in the north Polar regions than in the tropics.

In view of the way in which recent inventions are changing our mode of life, it would be folly to scoff at any prediction, however unlike our former conceptions. Aviation will profoundly affect the destiny of generations yet unborn, and Stefansson is no doubt perfectly right in stating:

> We shall 'soon' be booking our passage from New York to Liverpool by dirigible or plane or some other form of aircraft

BEYOND MAN'S FOOTSTEPS

Briton Rivière, R.A.

By permission of Mrs Briton Rivière

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> in as matter of course a way as we now book our passage by steamer. . . . In the summer season at least it will be thought an absurdity for those in a hurry to go from England to Japan by way of either New York or Montreal. They will fly over the north Polar ocean. . . . Since the days of Magellan it has been a commonplace that you can go east by sailing west. It is about to become an equal commonplace that you can go east by flying north.

Such are the dreams of to-day—very different from the dreams of the early explorers, and yet essentially the same. The same, too, as in the days of the old seers, who looked for a time when the desert should "blossom as the rose."

Meanwhile, to go back to those early Norsemen who explored Greenland in the fourteenth century, disaster came upon them from afar. Troubles and mismanagement at home deprived them of support; the colony slowly dwindled, and then became extinct. And so the first chapter in Polar exploration, after a glorious start, ends in defeat and gloom. Nature, aided by man's own shortcomings, has beaten Man.

Meanwhile, Robert Thorne, being a man of common sense as well as a born explorer, wrote down his opinions in a long letter which he addressed to Henry VIII, urging him to furnish ships with which to explore a new trade route in the North. In burning words he pointed out the wealth that Spain derived from the "Isles of Spicery," and endeavoured to kindle the enthusiasm of the King by pointing out that a short way to these most desirable markets might be found by way of the North. He wrote:

> Now then, if from the sayd New found lands the sea be navigable, there is no doubt, but sayling Northward and passing the Pole, descending to the Equinoctial line we shall hit these Islands, and it should be a much shorter way, than either the Spaniards or the Portingals have.

So wrote Thorne in 1527, little dreaming of the ships that would be wrecked and the lives that would be lost before Franklin, in 1845, should find a way through that ice-strewn sea and thus complete the navigation of the North-west Passage. Three hundred and eighteen years! Some dreams are long in coming true!

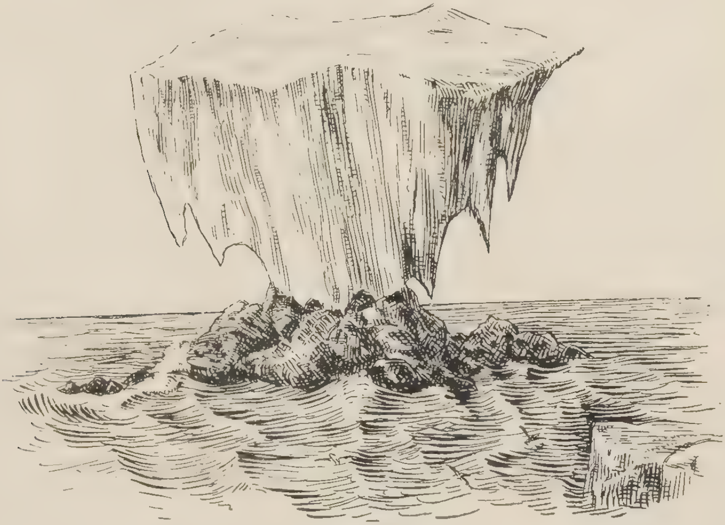
Thorne's enthusiasm fired a spark in the minds of many, and fanned into even greater brightness the flame that already burned in the soul of John Cabot.

Cabot, who though a native of Italy lived in Bristol, had already in the service of Henry VII made voyages of discovery. On the first of these, in 1497, he discovered Newfoundland and then landed on the shores of Labrador; in a later voyage he had visited the east coast of South America. And now, as "governour of the mysterie and companie of the Marchants Adventurers for the discoverie of Regions, Dominions, Islands, and places unknownen," he wholeheartedly helped on Thorne's great scheme.

Enthusiasm having been kindled, and a plan outlined, it was now the turn of the "Marchants Adventurers." Would they or would they not lend support to the scheme?

To their everlasting honour they nobly upheld the project, and helped to furnish an expedition; thus beginning the long, long search for the North-west Passage, in the course of which the Polar Seas were so exhaustively explored.

Between the time when Thorne wrote his imperishable letter from Seville and the day of the expedition sent out by the Merchant Adventurers a good many years had to elapse. But in 1553, smiled on by Edward VI, who was then on the throne, and supported by the merchants, who were all agog to increase their trade, a tiny fleet set out under the guidance of Sir Hugh Willoughby and Richard Chancellor. Their aim was a new trade route, and the path they sought was one that would reach the East by way of the West. Thus travelling, after many adventures Willoughby's ship reached Novaya Zemlya, from the discovery of which he pushed on to Lapland, intending to stay there in harbour for the winter. But cold, hunger,



AN ISOLATED BERG

After a sketch by Captain Allen Young, R.N.

and scurvy fought a deadly battle against the expedition, and Willoughby and his men all perished.

Chancellor, in the meantime, skirting along the northern shores of Russia, landed not far from Archangel, and from there made an adventurous journey to Moscow, from which place he presently returned to England, full of the wonders he had seen in Russia, or, as he called it, Muscovy. The people, their habits, their laws, their appearance, their houses, their characteristics—all these he noticed and afterward carefully reported. But, more than all, he carried out his contract with the merchants who had made his journey possible, and brought back with him a letter to the King of England from the Emperor of Russia, in which the Emperor showed himself so friendly to the newcomers that he stated:

> If your country marchants will make their market in our dominions, they shall have their free Marte with all free liberties through my whole dominions with all kinde of wares to come and goe at their pleasure, without any let, damage or impediment, according to this, our letter, our word and our seale.

This communication was naturally received with great joy by the English merchants, who saw themselves becoming rich men through trading overseas, and many who had so far looked with coldness upon these risky voyages now became all eagerness to further such promising enterprises. The association of Merchant Adventurers, instead of being just a little group of enthusiasts ready for any wild scheme, now developed into a properly constituted company, with a trading charter of its own, and with Sebastian Cabot as its governor for life.

Thus the visionaries, those brave-souled, earnest thinkers who had, in the face of ridicule, held to their opinions and supported the explorers, were justified. Business men, once they were assured that there was trade to be had, were all on the side of these reckless sailors. They applauded them; they gave them abundant and willing support. But it must not be forgotten that it was the visionary who had won, it was through his dreams that the money-bags of the merchants grew heavier, and it was his ideas that opened up the markets for their goods. Always it is imagination that adds riches to life.

And so now, the merchants having found a market in the strange country of Russia, exploration, as far as England was concerned, took a new turn. These voyages to the north coast of Russia, and the barterings that resulted, had a vital effect upon the exploration of the regions still farther north. One thing leads to another. Once exploration had begun, it went on, and little by little the geography of the till then unknown Arctic began to be understood.

During the years after Chancellor's expedition Stephen Burroughs (or Borough) and, later, Arthur Pet discovered and investigated the Kara Sea, a water of such danger that in 1893 Nansen, who passed this way in the *Fram* on his voyage in search of the North Pole, referred to it as "the dreaded Kara Sea." From which it is again plain that all these early discoveries along the north coast of Russia have a very definite bearing upon later expeditions aiming more directly at the North Pole.

England, having now become fired with the exploring spirit, was ready to go all lengths. In her enthusiasm she was prepared to explore in every direction, and it began persistently to be argued that there must be a waterway past the north coast of America leading finally to the East. That there is such a waterway we now know, for this is the North-west Passage, the existence of which was not completely established till Franklin's time. We know, too, what could not be known then, that, though there is a *passage*, it is no real 'waterway.' Davis Strait and Baffin Bay, which many people think of as wide stretches of water, are normally wide stretches of ice, through which there are narrow lanes of water. In the warm season these lanes grow wider, but at all seasons of the year there is more ice than water, so that the word 'passage' very aptly describes the path of the ship. But in the days of Henry VIII, when no one had penetrated within this region, speculating seamen argued that, though there might be a tiresome outer barrier of ice, once they got through this, they would be in broad, open water, along which they would sail with ease, and thus gain the East much more quickly than by any other route. But experience teaches. And it was only after repeated expeditions into these baffling waters that it became plain that there was no wide waterway—nothing but a 'passage' amid ice.

All these expeditions, therefore, that had as their main object the discovery of a North-west Passage must also be regarded as of prime importance in the history of Polar exploration. Among the greatest of the early explorers of this region was Martin Frobisher, who made three voyages into the northern seas. The first was undertaken in 1576, when in command of one tall ship and two small barques, sailing northward, he succeeded in discovering what he thought to be a strait, naming it after himself. It was really a bay running into Baffin Land, but was thought by Frobisher to cut through the middle of Greenland. The land, Meta Incognita, which he discovered, is not, as he imagined, part of North America, but is separated from the mainland by Hudson Strait. But this does not rob the discoveries of their importance. He also took back with him some pieces of black ore, which caused great excitement among the merchants, as an Italian alchemist claimed that "by coaxing nature" he had obtained a grain of gold from one of the specimens. With the thought of gold as a lure a much larger expedition was fitted out, and Frobisher returned to Meta Incognita to dig for gold. He filled his ships with the desired cargo at the expense of exploration, but the gold turned out to be glitter and not gold. A third voyage to the same quarter resulted in a yet larger cargo of useless rock, on the collection of which all the resources of the fleet were wasted. The raising of this side issue about gold had, from the point of view of exploration, deplorable effects indeed, and completely ruined Frobisher's large and well-equipped second and third expeditions. By the time he returned from his third voyage the myth about gold had already been exploded, and the useless rock was unloaded beside the wharf at Dartford. This dump was recently found, and specimens were sent to Cambridge for examination by experts.

ESKIMO SNOW-HUT, SHOWING THE OUTER PASSAGE THROUGH WHICH ADMITTANCE WAS GAINED

In addition to his discoveries, which if he had been his own master would have been much more important, Frobisher brought back a great deal of interesting information about the Eskimos whom he encountered, and the ice against which he had to fight for life. He described the dwellings of the Eskimos as "houses or rather dennes," with an entrance "not much unlike an Oven's mouth," and, perhaps with the idea of showing them what an English home was like, he and his men built a little house on the Countess of Warwick's Island (which lies off Frobisher Strait), and "garnished it with many kinds of trifles, as Pinnes, Points, Laces, Glasses, Kombes, Babes on horsebacke and on foote, with innumerable other such fantasies and toyes; thereby to allure and entice the people to some familiaritie against other yeeres."[1] The remains of this house were discovered in 1860 by Captain Charles Hall, the American explorer, who was engaged in searching for Sir John Franklin. To come upon these signs of an earlier domestic occupation during such a tragic search must have been very poignant.

In spite of the passage of time, the Eskimo still remains the only constant inhabitant of the American Polar regions. His dress and habits are not very unlike what they were in the days of Frobisher, although in the meantime we ourselves have so enormously altered our own mode of life.

If, however, in all those years the Eskimo has changed very little, still less has the ice altered. Frobisher, describing the packing of ice, gives a picture of it very much like the wonderful pictures Nansen paints. He says:

> The yce coming on so fast upon us, that we were faine to beare in and out, where we might espie an open place. . . . For the yce had so invironed us that we could see neither land nor sea, so that we were faine to cut our cables to hang over boord for fenders, somewhat to ease the ship's sides from the great and dreary strokes of the yce. . . . But . . . the force of the yce was so great, and likewise so rased the side of the ships, that it was pitifull to behold, and caused the hearts of many to faint.

To-day, even as in the day of Frobisher, the Arctic ice causes "the hearts of many to faint."

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[1] *I.e.*, to ensure their goodwill for possible expeditions in the future.

CHAPTER III

HUDSON PUSHES NORTH

THE enterprises of Frobisher had an immense influence upon the popular mind. They made it clear to the prudent that these apparently madcap voyages might be profitable, and therefore desirable. They also stirred up, among the more imaginative, discussion as to what lands (if any) might lie farther north. And so, in commercial circles, there grew an increasing interest in the unknown Arctic. In a still greater degree Frobisher's achievements excited the actual navigators, who burned to sail into new waters to which they might give an English name. Usually an explorer gave a name other than his own to his discovery. Often he thus immortalized his patron or a brother-adventurer. But how magnificently the Elizabethans won the prestige of naming territory can be seen by glancing at the map across which "Hudson," "Baffin," and "Davis" are written so boldly.

John Davis, who was a very clever thinker as well as an able seaman, made three voyages on behalf of the Merchant Adventurers in 1585, 1586, and 1587. On the first of these, with two ships, the *Moonshine* and the *Sunshine*, Davis, who was in command of the *Sunshine*, managed to coast for a long way up the west side of Greenland, which seemed to him so barren that he called it the "Land of Desolation." From Frobisher and others he had heard of the existence of Eskimos in these wild places, and he included in his crew some musicians, hoping by their tunes to charm the savages. Though languages may differ, and people be unable to understand a foreign tongue, music is indeed a universal language, and John Davis gave great proof of his cleverness in realizing this. Through the great masses of ice went the two little ships, creeping farther and farther north, till they reached latitude 64° N. Here they anchored, and here presently they saw Eskimos approaching. "In great haste," says Davis, "we brought our Musicians from our shippe, . . . ourselves dancing and making many signs of friendship." These devices were very successful, and on his second voyage, in 1586, with a fleet of four vessels, the two of the earlier voyage and two others named the *Mermaid* and the *North Star*, he again explored the Greenland coast. This time he made such friends with the Eskimos that the English crew and the Eskimos competed together in wrestling and jumping. "Our men," says Davis, "did overleape them, . . . but we found them strong and nimble, and to have skill in wrestling, for they cast some of our men that were good wrestlers." And so then, as now, Englishmen cemented a friendship with sport, and this occasion may fairly be regarded as one of the earliest records of an English team going abroad!

AN ESKIMO

An important commercial result of Davis's voyages was the establishment of the great Newfoundland Banks cod fishery. In addition there were many important geographical discoveries—Davis Strait (called after himself), Gilbert's Sound (on the west of Greenland), and Sanderson's Hope, an island (72° 41′ N.). Little by little the explorers were getting farther north. But the Pole was still far away, and many a year was to run its course before Peary in 1909 reached latitude 90° N. But every one of these early discoveries had an influence upon later achievements; every bit of knowledge gleaned by the men in the sixteenth century had a bearing upon the discoveries made in our own times. When Nansen, for instance, crossed Greenland in 1888 he started from the east coast and worked his way to Godthaab on the west, which is where Davis met the Eskimos and called for his musicians to charm them. One can almost imagine that among those Danes and Eskimos who ran eagerly to welcome Nansen on that September morning in 1888 there hovered also the ghost of John Davis, greeting a fellow-explorer.

A GREENLANDER SURPRISED BY A BEAR

While Great Britain was definitely searching for that North-west Passage, and thus, at the same time, exploring the Arctic, the Dutch, aiming also at the discovery of a trade route, were turning their attention to the path which ran east along the frozen shores of Russia and Siberia. But Arthur Pet and others who had battled into the Kara Sea had brought back such terrible tales of the ice there that the new explorers determined to push out into the open sea and steer northward, instead of hugging the coast. Their idea was to discover a passage that should cut across the region in which the North Pole is found.

Early in 1596 with this aim in view William Barents, a Dutchman, explored the west coast of Novaya Zemlya, discovered Bear Island, and got within sight of Spitsbergen. Ice stopped his progress, even as it has stopped many an explorer since. Unable to go on, Barents rounded the north end of Novaya Zemlya, and here his ship was nipped, and he and his men were forced to spend the winter there. Landing in Ice Haven, they built a house, and endeavoured to keep themselves warm through the dark and terrible months of the winter night. In spite of great suffering most of the party survived the winter. Up till then it had been believed that if the cold did not kill the explorers at least the darkness would send men mad. For the absence of light as a rule has a horribly depressing effect upon the mind of imaginative men. Even a familiar room in the dark looks strange and uncanny. How much more, then, these lonely regions over which the veil of mystery still hung! Stefansson, that most robust of modern explorers, who knows the Arctic as a Londoner knows Piccadilly, has recently done much to prove that the dark Arctic winters need be no more depressing than our own, but Barents lived some three centuries earlier, and in the years that have elapsed since then our views about the North have changed so much that the Arctic may be said to have been reborn. Imagine this little company, pent up within their tiny house in that snowbound, desolate haven, spending days and nights without venturing out of doors, so cold that,

A WARM CORNER AMONG THE WALRUSES

From "Farthest North," by Fridtjof Nansen, by permission of the author

OVER SEA-ICE WITH A DOG-TEAM

From " With Stefansson in the Arctic," by Harold Noice though they ate before a fire, their backs froze white, killing bears for food, and losing count of time because "the clocke stood still," and they could not tell from the twilight outside whether what they saw was "the light of the day or of the Moone." Imagine them, out of all human reach, living through five long months, and imagine, too, their overwhelming joy when they first spied reappearing "the edge of the sunne." This was January—or mid-summer, in those regions—but the ship was still frozen in too severely to move, and in February they experienced weather that was more bitter than ever before! By May the ship was still as fast in the ice as in March, and in the middle of May, fearing a second winter in the ice, the voyagers entrusted themselves to small boats. Before they left, Barents wrote a letter and hung it up in the house they were quitting. In this he stated how he and his men had been forced to live there for a winter, what pains and misery they had endured, and how, failing to get their vessel out of the ice, they were at last forced to put to sea in small open boats, and so to commit themselves into the hands of God. To this letter each man put a cross, and then they embarked and set sail. Happily they escaped shipwreck, and after much suffering they reached the shores of Lapland, journeying from there to the Hague, where they landed in October 1597, after an absence of about eighteen months. Ice Haven was never reached again until 1871, when Carlsen, a Norwegian, voyaged there and found the hut standing unchanged.

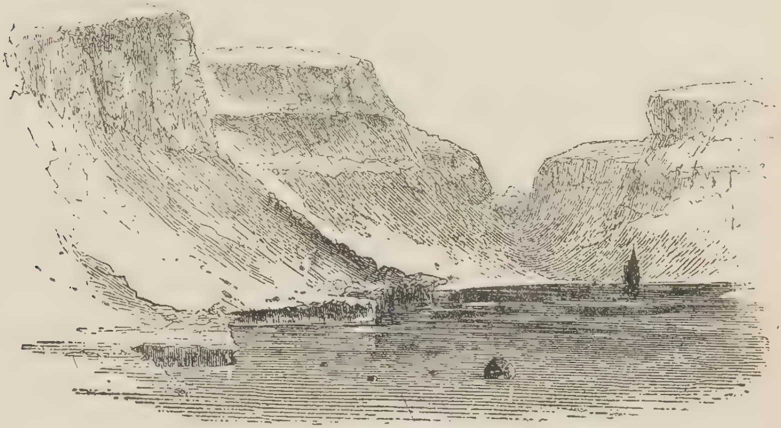
They landed without their brave pilot Barents, who had died on the voyage. His name is written large on the map, in the Barents Sea, and the winter that he and his men spent on Novaya Zemlya will never be forgotten in the history of Arctic exploration, for it spread abroad the knowledge that Europeans could live through those terrible tests that the Arctic imposes upon every explorer bold enough to winter within its boundaries. Barents and his men had survived: others could do the same. Although the Norsemen had done this again and again for generations, it was not generally known in the day of Barents.

The exploring voyages of Davis and Barents had added immensely to men's knowledge of the North, and now a third man, Henry Hudson, was to extend that knowledge farther.

Hudson Bay, that huge bay in North America, mirrors for ever his achievement. Across those wide waters the trail of his ship, though unseen by the eye, still lingers, and in imagination you may see him there. And then again, north, much farther north, you will find him once more—on the east coast of Greenland, far up among the ice, beyond that frozen nose of land in latitude 73° N., which he imaginatively named Cape Hold-with-Hope. Up beyond this, among the ice between Spitsbergen and Greenland, in a latitude of 80° 23′ N. came Hudson again in 1607; and here too he left his mark—his 'farthest north,' a record in Arctic exploration not to be beaten for many a long year. "Our shroudes and sayles," he says, "were frozen. . . . We were compassed with Ice every way about us." Ice, always ice! In 1611 Hudson perished at sea, as the result of a mutiny among his men, who heartlessly set him and some sick and loyal seamen adrift in a small open boat. But though his life ended in this sad way, his fame has not perished.

In his account of his voyages along the west coast of Greenland Davis had reported seeing whales "continually." The first great Arctic whaling industry was in Spitsbergen waters, and had sprung directly from the exertions of Barents and Hudson. Now came this report of other profitable waters. Traders were not slow to take the hint, and from this date the industry was considerably developed.

Thus the great Arctic waters began to be more and more frequented, not only by men who went out for the purpose of exploring, but by men whose object was to capture large quantities of that profitable quarry, the whale. The knowledge thus obtained has, however, been of the greatest service to those also whose object has been not so much to catch whales as to capture the secrets of nature in the Arctic. So that on all sides science has been served—by the men who were out for money, no less than by the men who were out for fame. In this way knowledge grew; and the Arctic began to be known, not as a vague region of trolls and strange magic, but as a place where, in spite of its danger and rigours, a man might earn a living and even come back rich.



CAPE CORNELIUS GRINNELL
On the north-west coast of Greenland.

The whale has from the earliest days fascinated imaginative minds. Herman Melville in his marvellous narrative has lifted the story of Moby Dick, that immense and sinister creature of the deep, into an epic. Like Coleridge's albatross, Moby Dick must for ever have a place in literature. To a trader, however, a whale is a matter of pounds, shillings, and pence. To the commercial eye of the old whaler the whale most worth his attention was the *Balæna mysticetus*, or 'right whale,' now practically extinct. Another name for the same species is 'bowhead.' When one of these whales was sighted there was immense excitement on board. Such a whale, if exceptionally large, may carry as much as a ton of whalebone in its mouth. And whalebone is very valuable. To-day the market price of "baleine" or whalebone from a right whale is £500 a ton; from 'finners,' another whale, often mistaken for the right whale, about £40 a ton. The loss to the trader through the practical extinction of the right whale is obvious. Mr W. G. Burn Murdoch, who was on more than one occasion associated with the well-known Scottish explorer Dr W. S. Bruce, declares that in 1892, when he and Dr Bruce were both out in the Antarctic on the Dundee Expedition, the value of whalebone was £2500 per ton. An average right whale, he says, would bring in about £1500, but a 'finner' would produce only about £95. These finners, which are so called because they carry on their back a small fin, are immense and powerful creatures. Their appearance, however, in the days when right whales were still plentiful was frequently the cause of rage and disappointment among whalers, who had been hoping to spy a right whale. Such an occasion has been well described in the following passage by Mr Burn Murdoch:

> The silence was broken by a whale rising between us and the ice; he was about seventy feet long I should guess. Some one called, "He's a bowhead," and every one forgot all about the ice and thought of whalebone and blubber and great profits. . . . A second time he rose quite close to us, spouted, sighed heavily, rolled slowly over and went down without showing enough of his back to let us know whether he was a finner or a right whale. Certainly his colour was not right—it was not black enough for a bowhead: still the

> colour would not matter, we thought, if he had no fin on his back. The third time he rose higher, and just as he was going down a diminutive fin appeared, and a shout of laughter echoed in the misty stillness, and every one bundled off to his work, jeering at the man who "couldn't tell a bowhead from a finner."[1]

Now that the right whale is almost extinct the modern whaler has to rely upon the despised finner for most of his profit. The superior speed and fighting capacity of the latter animal has been countered by the invention of the whale-gun, the bomb lance, and the swift steam whaler, which can chase the most powerful whale on even terms, regardless of wind and weather. No longer are whalebone and blubber the only or even the main objectives of the whaler, no single portion of the huge body of these mammals being now wasted.

The whaler is, of course, definitely out for trade, and often enough he cares very little for anything except the pursuit and capture of his prey. Asks Mr Burn Murdoch:

> Is it not a hideous marvel that Dundonians should show such splendid enterprise as to send four ships out here for whales, and at the same time show total disregard for the scientific possibilities of such a cruise? . . . To the whaling skipper, animal life beyond his own and the bowhead's is absolutely uninteresting. . . . Consequently the information he can impart is extremely limited.

Commerce has always attracted the many: beauty will be for ever the pursuit of the few. And yet there have been great explorers who have doggedly carried out the job in hand while at the same time they have rejoiced in the beauty around them. In fact, it may very well be doubted whether any investigator, whatever his pursuit, is without this sense of beauty. Consciously or unconsciously he must be urged forward by something more than the desire to perform mechanically a task undertaken.

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[1] *From Edinburgh to the Antarctic.*

Since 1892 the science of whaling has suffered enormous changes. The old hand harpoon has become united to a gun, and a most formidable weapon is the result. A whale has very little chance against this modern device, by which a harpoon, fitted with hinged barbs, and carrying in front of it a cast-iron cone loaded with powder, is placed in the mouth of a gun. When the gun is fired the conical shell buries itself in the flesh of the unfortunate whale, where it explodes and kills him. Fastened to the harpoon itself is a great coil of strong rope, a thousand yards in length, and capable for the first 200 yards of standing a pull of twenty tons, which effectively prevents any escape on the part of the whale. The thought of these magnificent monsters of the deep in so deadly a contest with man gives rise to much reflection. A whaler naturally wants to kill as many whales as possible, but if hunting should be carried to the extent of exterminating this extremely interesting creature of the deeps, the calamity would be world-wide. That there is such a possibility is evident from many reports. Stefansson, in *The Friendly Arctic*, states:

> A large bowhead whale has 2000 pounds of "headbone" and was worth $8000 to $10,000 and fortunes were made in whaling. The largest catch I have heard of was sixty-three whales in two years by a single vessel. Since many other ships also caught large numbers, the market was temporarily glutted and the price dropped to half, but even so the profits were fabulous. But after 1906 a big whale was worth only $400 to $800 and the whaling fleet vanished from the Arctic in a year.

The Arctic hunting ground having been largely abandoned, the Antarctic, hitherto little exploited, became the new battlefield. Dr J. Bryant, in a recent magazine article entitled "Antarctic Whales in Peril of Extermination," says:

> The modern Antarctic whale fishery is overcrowded, and several things must happen. The whales will perish as they have done in the North. . . . The right whale has gone; the hump-back—once taken in enormous numbers by slow craft—has practically gone; the fin whale still exists in large numbers: his speed and shyness are his safeguards.[1]

In the same article he states that in 1925–26 the whale oil taken exceeded 1,500,000 gallons, and the oil from one whale alone, some 125 feet long, was valued at £1000. No wonder whalers hunt! No wonder whales diminish! But there is very solid sense in Dr Bryant's final injunction:

UNDER THE LEE OF A BERG IN MELVILLE BAY
From a sketch by Dr E. K. Kane

> O ye who delight in the most luscious of candies, the choicest of soaps, the subtlest perfumes, the purest of margarine, and the best imitation ostrich feathers, go easy with these commodities—widows and orphans are common in the whaling communities of this world![1]

And in passing let it not be forgotten that the foundations of this great trade were laid very many years ago by the enterprising Dutch and British seamen who busied themselves in exploiting what was then a new way of money-making.

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[1] *Illustrated London News*, September 10, 1927.

While the trade in whales was being thus increased William Baffin, a skilful pilot, was trying to extend the fishing waters, and in 1615, after piloting his vessel, the *Discovery*, along the coasts of Davis Strait, he steered farther north, and eventually forced a way into the large body of water since known as Baffin Bay. This bay, which is the very heart of the American Arctic, was thoroughly explored by this great seaman, who investigated not only the bay itself but the straits leading from it, which he named after his patrons and friends. Smith Sound, Jones Sound, Lancaster Sound, and several others still keep the names given them by Baffin, and down their narrow lanes pour great volumes of water, the great southward-driven Polar currents which meet in Baffin Bay. Along the shores are the tribes of Eskimos whose habits and customs have been so minutely studied by the great Arctic explorers Rasmussen and Peary. In the thirty years between the discovery of Davis Strait and the discovery of Baffin Bay Arctic exploration had simply leaped ahead. Though for a good many years Baffin's great achievements were discredited, largely owing to the fact that Purchas neglected to include in his *Purchas His Pilgrimes* Baffin's map and journal, he was rehabilitated by Ross and Parry, and his discoveries acknowledged. During these thirty years, therefore, our knowledge of Greenland had been greatly increased; Barents had spent an entire winter in the North; Baffin had explored far into Arctic seas; and Hudson, by reaching a latitude of 80° 23′ N. had pushed northward the landmark of the known much farther into the regions of the unknown: man was definitely nearer to the Pole.

CHAPTER IV

THE ESKIMOS

STEFANSSON, that enthusiastic champion of the possibilities of living comfortably in the Polar regions, has set himself to overturn all the old ideas of the discomforts of the climate in these desolate places—discomforts so extreme that to many people it seems astonishing that any human beings should be able to sustain life there at all. Stefansson, who has spent many years in these cold quarters, finds life there, however, not only bearable but enjoyable. And like all true enthusiasts he is anxious to enthuse others. He foresees a day when civilization will tend to go north rather than south; and when cold, rather than heat, will be the criterion of the desirable climate. Many arguments can be adduced in support of his theory, and to many minds the most powerful of these is the prospect that he holds out of a good money return. He aims at nothing less than "to abolish the Arctic." In its place he would substitute a land, if not smiling, at least productive. He writes:

> The northern prairies are about to become pastures of vast herds of domestic animals producing meat and wool and hides and various other by-products of that sort of development. Settlements are now striving northward along the rivers, colonists are appearing here and there along the seaboard, mines are known to exist and oil-wells have been bored.[1]

Wilder dreams than this have come true, and those who prophesied their unfulfilment have been confounded. Stefansson may very well be right. But the things he predicts will not come to pass during the lifetime of this generation; and meanwhile it may be as well to consider the lot of the Eskimos and other Arctic native tribes as it was in the early days of discovery and as in many parts it still remains. Scattered along the coasts of Greenland, the most northerly parts of America and Asia, on the narrow straits leading out of Baffin Bay, and even on the islands north of Greenland, there are groups of people who live their lives year in and year out in these ice-bound places. Not only do they live there, but they *like* living there—a fact which suggests that they must be very different from ourselves. And so they are. In dress, manner of living and eating, and ideas they are entirely unlike Europeans. Sir W. E. Parry, the Arctic explorer, referring to the natives of Melville Island, says :

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[1] *The Northward Course of Empire.*

ESKIMOS SKETCHED BY A MEMBER OF ONE OF PARRY'S EXPEDITIONS

> In stature they are much below Europeans, although the men are not wanting in muscular strength in proportion to their size, or in activity and hardiness. In figure they are rather well formed; by no means ill-looking people. The hair both of males and females is black, glossy, and straight.

For more years than anyone can count these tribes have been accustomed to cold, and their whole idea of the world is of a land of ice. "In your country how long have you to dig before you come to ice?" an Eskimo asked a European explorer. "We never come to ice" was the answer. But the Eskimo did not believe him. It was impossible for him to imagine a land where the subsoil was not frozen.

Where did these strange Eskimo people come from originally?

Most likely in the very far away days they were North American Indians who gradually wandered farther north, perhaps in search of food, perhaps fleeing from an enemy, perhaps merely driven by that world-wide instinct which urges men to make their way into the unknown.

Probably they went through Grinnell Land up to Smith Sound, and, crossing from there to Greenland, turned south, thus populating the west coast, and from there worked their way round the south and up the east coast—a very considerable journey.

ESKIMO WOMAN

From Hall's "Life with the Esquimaux"

Their name, which may be spelt 'Eskimos' or 'Esquimaux,' means "those who eat raw flesh," and even to-day the Eskimo who is hungry picks up and devours with relish any raw meat he can find. Sometimes he may put it in a pot and boil it, but he will just as cheerfully eat it uncooked. To an Eskimo boy a piece of the frozen fin of a seal is an excellent breakfast; he will lie, contentedly chewing the hard meat, under his covering of skins, inside a hut (or *igloo*) which, though it may be built of snow, is kept at such a temperature by a burning oil lamp that a stranger coming in from the fresh air outside is most uncomfortable. Meals play a very important part in the life of an Eskimo. In cold countries it is necessary to eat large quantities of food to keep warm, and when meat is plentiful, and a quantity has been obtained, men, women, and children will go on eating till they cannot move. Then, throwing themselves on the ground, they will lie and sleep, as an animal does, till the effect of this overeating has worn off. All this may sound very disgusting to us, but if we were suddenly to find ourselves transported to East Greenland we might change our minds. We might find we were ready to consume at a meal as much as we should ordinarily eat in a day. If a man is to live at all in the Arctic region he must fortify the inside of his body with extra food, just as he must fortify the outside with extra clothing. If we live in a house made of snow, with a sheet of ice for a window-pane, out of which we look upon a world for ever white, we shall naturally need more food and more clothing than in our present comfortable surroundings. The habits of the Eskimo have been largely affected by three great factors—cold, wind, darkness. From these three enemies he cannot escape; his only course, therefore, is so to adapt himself and his habits that *in spite of them* he may live. And so the Eskimo's intellect has been mainly

SEALING IN THE WINTER

An episode from Captain Hall's *Life with the Esquimaux*. This Eskimo watched patiently throughout a long dark night until in the early morning he heard the seal blow and was able to spear it.

directed toward securing supplies of food and clothing. The battle against ice, wind, and darkness has been so terrible, and so absorbing, that it has completely occupied his mind. Warmth represents the thing he most desires: and to the attainment of this he devotes his whole strength.

His days begin and end in hunting. If he would live he must hunt. For, except in the trading centres, there are no nice little shops near at hand, where he can each week spend the money he has earned. If he desires a meal he must go out and catch it; and the fortunate man is the good hunter, for he will have plenty of meat.

ESKIMO WALRUS LANCE

This absolute dependence upon their surroundings for food has had the effect of drawing all Eskimos living near one another into a community. Food is very often shared by a community. If a village has got a good stock of seals and walruses then it is a happy village; for every one will get a share. Thus in the spring a great walrus-hunt may be organized, and all the men of the tribe will go out, bringing back perhaps a hundred or more walruses, as many seals, and maybe a narwhal. All this booty will be buried in the frozen ground in a great *cache*, where it will lie till the autumn comes on, and food is scarce. For in a country where there are no fields of corn ripening to produce a harvest meat is almost the only food. A few roots and berries flourish, but there are no wide acres under cultivation; an Eskimo's idea of food is meat, and therefore, just as we stack our hay and our corn, the Eskimo makes a *cache* of all he has caught when hunting, and thus, in his own way, he too prepares for the winter.

In spite of the hard, frozen soil, in spite of the searching winds, in spite of the frequent showers of snow, the Arctic regions are not without flowers. For a short time they glow, these courageous, beautiful, tiny things, leaping into life and beauty wherever the earth is not waterlogged and so swathed in moss or altogether barren. Of these flowers the yellow Arctic poppy is the most common, and travellers one and all agree in the delight these bright flowers arouse.

WALRUSES SPORTING

Dr Bruce, one of the most thorough of investigators, reports having seen Arctic poppies and purple saxifrage on a "narrow strip of ground, only a few yards long, and at the most four or five yards in breadth, on an island in Franz Josef Land, *north of the* 80th degree of latitude, that was otherwise completely covered with permanent ice and snow." Think of it—in a land permanently covered with ice and snow, in a tiny, favoured spot, flowers glowing yellow and purple! Think what it would mean to see that purple patch in the midst of a field of white snow. How the colour would shine out! How it would delight the beholder and set his heart singing! Set in that monotonous stretch of white the loveliness of the blossoms would be doubled; they would be enchanting. A little farther, and the traveller would be beyond the flowery patch. But he would not forget it. He would carry the memory of it with him in his heart, to delight him anew on other days.

In the years long before there was any exploration of the Arctic there were rumours of the strange race inhabiting the Far North. Before Christ was born Pliny had talked of the 'Indians' driven by tempest upon the northern coasts, and there were tales of the sea-unicorn, or narwhal, with its one great projecting tusk. These rumours, drifting down the centuries, took fresh shape, but were never wiped out. Mixed with them were legends handed on by the Norsemen, acquired from their early colonization, with the result that when, during the Elizabethan period, the Arctic began to be further explored, the early adventurers went expecting to find there 'savages.' Nor were they mistaken, for the Eskimos, having been established in the Arctic for some centuries, were found in possession of the lands which Europeans were at last investigating. Frobisher, in 1576, when cruising in Frobisher Strait took a small boat and rowed to the shore to see if there were any people there. Having spied some he went on shore and made signs of friendship, with the result that nineteen of them boarded the English vessel. Says Frobisher:

> They spake, but we understood them not. They bee like to Tartars, with long black hair, broad faces and flatte noses, and tawnie in colour, wearing Seale skinnes, and so doe the women, not differing in the fashion, but the women are marked in the face with blew streekes down the cheekes and round about the eyes. Their boates are made all of Seales skinnes, with a keel of wood within the skin.

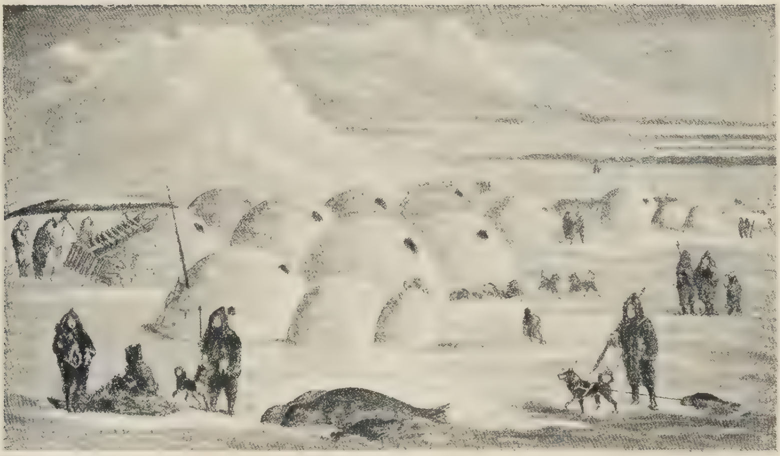
The rough English sailors and the strange, fur-clad Eskimos must have eyed one another with equal curiosity.

And this odd little exchange of courtesies must have set going on either side many strange speculations. Who were these newcomers, and why had they come? That must have been the burning question among these primitive people who had lived so long undisturbed that they almost imagined themselves the sole inhabitants of the earth. Very strange indeed must have been the thoughts of both as they stared, each at the other.

With the hope of finding out more about the 'savages,' Frobisher enticed one of them on board with a bell, and, giving him the bell, took him and his boat and 'so kept him.' What they did with him after is not known. They may even have brought him, protesting, to England.

ESKIMO SLEDGE

But it is remarkable that Frobisher's description, as recorded after his voyages, establishes the fact that in appearance, general habits, and manner of living the Greenland Eskimo of to-day is very little different from the Eskimo of the past. Think how life among ourselves has in the meantime changed! Our ships, our clothing, our manners are very different. We have trains, we have motor-cars, aeroplanes, electricity, gas, telephones, wireless, and a thousand other means of making life comfortable. But the Eskimos have altered very little. Missionaries and traders have civilized them to some extent, but they are still a distinct race, with habits totally unlike our own. In the trading centres they have their dance halls, their shops, and their cinemas, but there are many lonely outposts quite cut off from the throb of humanity,



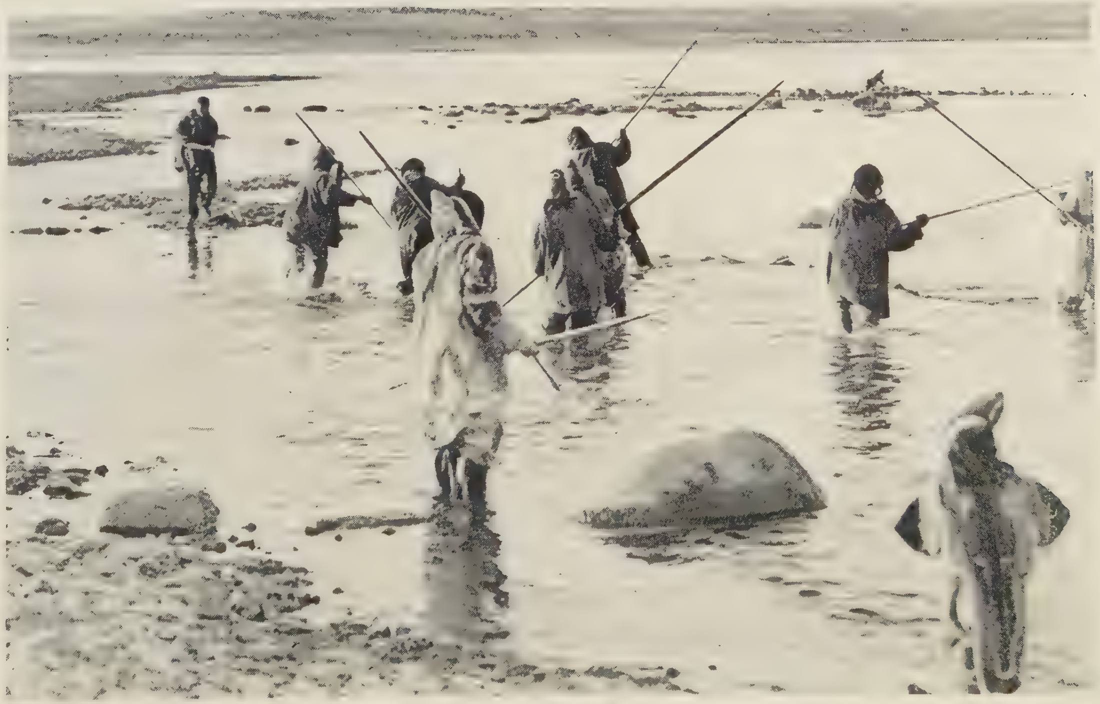
DRAWING OF AN ESKIMO VILLAGE

From "Life with the Esquimaux," by Captain Charles Francis Hall

PRINCE ALBERT SOUND VILLAGE

From a photograph by Stefansson. Note the snow wall for drying skins.

From " My Life with the Eskimo "



ESKIMOS OF CORONATION GULF FISHING WITH SPEARS

From " The Friendly Arctic," by Vilhjalmur Stefansson and in those places still farther north, such as the coasts round Smith Sound, where the people are known as the Highland Eskimos, they still remain a primitive people, concerned almost entirely, as were their forefathers, with hunting.

Eskimos have always afforded a fascinating subject for study, and many men have written about their folk-lore and habits. But in this connexion two names stand out pre-eminently, Knud Rasmussen and Vilhjalmur Stefansson, both of whom have contributed enormously to our knowledge of this interesting race.

Stefansson's interest in the Eskimos having been deepened by an early Polar visit in 1907, it was only to be expected he would want to carry his investigations further. To do this he sought and obtained the support of the American Museum of Natural History, and in 1908 he embarked on a new expedition. This journey, which lasted from 1908 to 1912, covering four years and eight months, was undertaken in the hope of discovering other native tribes, east of Cape Bathurst—though the Eskimos living round the Mackenzie River flatly denied that any such tribes could exist. But the average Eskimo has no imagination. To him the world consists only of such things as he knows to exist by experience. The word 'suppose' has no real meaning to him. If he has found fish in the past in a certain spot he knows he will find it there in the future, but he will be very slow at trying new fishing places, his argument being that, as no one has ever fished there before, there cannot be any fish! Such reasoning is usually the reverse of sound, but it is typical of the Eskimo. And so, never himself having been east of Cape Bathurst, the Mackenzie River Eskimo was prepared to say confidently that no Eskimos would be found there. Stefansson, being of a very different temperament, replied, "I will go and see." Joined by his friend Dr

Rudolph Martin Anderson at Toronto, he started from New York in April 1908, and by way of the Mackenzie River they came to Fort MacPherson in the following June. Their plan was to go by boat to Cape Bathurst and spend the winter near Cape Parry (east of Cape Bathurst), and from there start farther east as soon as the weather should permit.

This plan was overturned, however, by the Royal Northwest Mounted Police in charge at Cape Bathurst. They regarded the plan as foolhardy, and in the interest (as they held) of Stefansson they refused to give him the large supply of matches, sufficient for a year or more, which he needed to finish his equipment. All arguments having failed, Stefansson was forced to turn west, in order to get supplies from Point Barrow.

As a result of this change in plan the expedition party had to spend the winter near Smith Bay, which Stefansson described as the spot of all others where "we were least willing to be overtaken by winter."

Here Stefansson set himself to collect folk-lore, and through the long dark days he gathered from the Eskimos in his party many amusing and valuable stories, gaining an insight into their minds, their habits, and their history, and living in such intimacy that their ways became his ways. Thus opened the investigations which were pursued for more than four years, and which have added immensely to our knowledge of the Eskimo. The winter of 1908 passed, and by August 29, 1909, Stefansson and his party were at Cape Parry, and on this date he began to carry out his great idea of "living off the country."

This mode of exploration has always been particularly dear to Stefansson, and on his later journey across the Beaufort Sea (1913–18) he brilliantly proved it to be possible and, as he might even say, comfortable, though few of us would go so far as to agree with him there.

The spring of 1910 found Stefansson and his faithful but sceptical Eskimo companions nearing their first great discovery. At Point Wise (near the Dolphin and Union Straits) they found wood recently chopped by an adze. It was like Robinson Crusoe over again! Man must have made those choppings; therefore man could not be far away.

Stefansson was delighted. Knowing that as far back as 1851 that most accurate explorer, Rae, had reported seeing men on Victoria Island, he was fully prepared to find inhabitants there; and now this chopped wood, proving that man was in the vicinity, filled him with the happiest expectations. Not so with the Eskimos. They shook with fright. The unknown savages would kill all strangers! So the party proceeded, one cheerful European and several very uncheerful Eskimos.

Next day they came upon a deserted village with no less than fifty snow-huts. Among themselves the Eskimos whispered stories of frightful atrocities, and their prophecies as to the future were more than gloomy. But presently they came upon an Eskimo, solitary and grasping a copper-bladed knife, and engaged in the peaceful pursuit of fishing. This Eskimo took the newcomers for spirits, and at once muttered a charm against them. But on being reassured he took them to his camp, not far away, where they were warmly welcomed by the rest of the tribe. Here conversation proved there to be not much difference between the dialect spoken by the Mackenzie River Eskimos in Stefansson's party and the language of these nomads of the Dolphin and Union Straits. On the evening of the third day Stefansson set out to visit the Eskimos living on Victoria Island, their present friends being encamped on the frozen straits lying between Victoria Island and the mainland. After a remarkable journey by sledge and on foot he came upon a type of

Eskimo with beards of light brown, a few of whom had grey eyes. They were taller and considerably paler in colour than the tribes he had so far encountered, and they, in their turn, saw him so little different from themselves that at first they took him for an Eskimo too. The term 'blond' has become fixed upon them, largely through newspaper reports, which have given an exaggerated idea of their pallor; for, though paler than other tribes, they are distinctly swarthy. Stefansson himself prefers to call them the 'Copper' Eskimos, because so many of their tools are made of this metal. The origin of their colour remains a mystery. Other travellers had reported their existence before Stefansson. As far back as 1656 there is a reference to them by Nicolas Tunes, who sailed through Davis Strait in his fishing-boat. Sir John Franklin referred to them in 1821; so, too, did later explorers, Dease and Simpson in 1839, Klinkenberg in 1906, and Mogg in 1908.

From that date till now there have been many reports and speculations about them, both from travellers who have actually come across them, and from others who, having gone specially to find them, without having done so, have doubted their existence. Two reasonable theories to account for their origin have been put forward. The first is that the type is one which is "strictly accidental and for which no rule can be formulated"; the second is that they may have in their veins the blood of some remote Norse ancestry which expresses itself thus.

The former of these guesses commends itself to Rasmussen, the latter to Stefansson. There the question for the time being rests.

These Eskimos on Victoria Island, who lived in snow-huts and "gathered their food with the weapons of the Stone Age," accepted Stefansson as one of themselves. They showed him every sign of friendliness, and took him into their community. They built him a house of snow for his own use, and they feasted him on dainty titbits such as the flipper of a seal, or soup made by "pouring cold seal into boiling broth." This they consider a most delicious delicacy, and very superior to any of the strange foods Englishmen manage, in spite of their nastiness, to swallow. Here Stefansson lived very happily for some time, gleaning a great deal of new knowledge. Their snow-huts were like the snow-huts of their ancestors of centuries ago, built of thick blocks of frozen snow, and with an opening, as Frobisher had said, "not much unlike an Oven's mouth." This opening is often protected from the outside cold by a longish tunnel, through which the owner of the hut and his visitors must enter on all fours. In the hut all is warmth and smell. A lamp with a wick of moss soaked in blubber heats the air to such a degree that fur coats have to be shed, both because they are too thick, and because if the snow in them begins to melt the coats will become very wet, and, if put on in this condition when the wearer goes out, will freeze as hard as a board. So coats are often left in the vestibule passages, to be put on again before venturing into the freezing outside air.

ESKIMO HUTS

From Kane's "Arctic Explorations"

The erection of a snow-hut is a much less lengthy business than the building of our own houses. Rasmussen had one made for him in half an hour! In his book *The People of the Polar North* he says: "They hewed large blocks out of the hard snow; these were to be the walls of our new house. Then they set it up in a hollow in the snow, and in the course of half an hour it stood complete."

Sir W. E. Parry gives a more elaborate account of the same process:

> The only materials employed are snow and ice; the latter being made use of for the windows alone. The work is commenced by cutting from a drift of hard and compact snow a number of oblong slabs, six or seven inches thick and about two feet in length, and laying them edgeways on a level spot, also covered with snow, in a circular form and of a diameter from eight to fifteen feet, proportioned to the number of occupants the hut is to contain. Upon this as a foundation is laid a second tier of the same kind, but with the pieces inclining a little inwards, and made to fit closely to the lower slabs and to each other, by running a knife adroitly along the under parts and sides. The top of this tier is now prepared for the reception of a third, by squaring it off smoothly with a knife, all which is dexterously performed by one man standing within the circle and receiving the blocks of snow from those employed in cutting them without. When the wall has attained a height of four or five feet, it leans so much inward as to appear as if about to tumble every moment, but the workmen still fearlessly lay their blocks of snow upon it, until it is too high any longer to furnish the materials to the builder in this manner. Of this he gives notice by cutting a hole close to the ground in that part where the door is intended to be, which is near the south side, and through this the snow is now passed. Thus they continue till they have brought the sides nearly to meet in a perfect and well-constructed dome, sometimes nine or ten feet high in the centre; and this they take considerable care in finishing, by fitting the last block or key-stone very nicely in the centre, dropping it into its place from the outside though it is still done by the man within. The people outside are in the meantime occupied in throwing up snow with the shovel, and in stuffing in little wedges of snow where holes have been accidentally left.
>
> The builder next proceeds to let himself out by enlarging the proposed doorway into the form of a Gothic arch three feet

high, and two feet and a half wide at the bottom, communicating with which they construct two passages, each from ten to twelve feet long and from four to five feet in height, the lowest being that next the hut. The roofs of these passages are sometimes arched, but more generally made flat by slabs laid on horizontally. In first digging the snow for building the hut, they take it principally from the part where the passages are to be made, which purposely brings the floor of the latter considerably lower than that of the hut, but in no part do they dig till the bare ground appears.

The work just described completes the walls of a hut, if a single apartment only be required; but if . . . several families are to reside under one roof, the passages are made common to all, and the first apartment (in that case made smaller) forms a kind of ante-chamber, from which you go through an arched doorway five feet high into the inhabited apartments. When there are three of these, which is generally the case, the whole building, with its adjacent passages, forms a tolerably regular cross.

For the admission of light into the huts a round hole is cut on one side of the roof of each apartment, and a circular plate of ice, three or four inches thick and two feet in diameter, let into it. The light is soft and pleasant like that transmitted through ground glass, and it is quite sufficient for every purpose. When after some time these edifices become surrounded by drift, it is only by the windows . . . that they could be recognised as human habitations. It may perhaps then be imagined how singular is their external appearance at night, when they discover themselves only by a circular disk of light transmitted through the windows from the lamps within.

The next thing to be done is to raise a bank of snow two and a half feet high, all round the interior of each apartment, except on the side next the door. This bank, which is neatly squared off, forms their beds and fireplace, the former occupying the sides and the latter the end opposite the door. The passage left open up to the fireplace is between three and four feet wide.

Furniture there is practically none, and the ventilation is still less. All sorts of queer odours scent the stifling atmosphere—boiling broth, the blood of seals, stale clothes, unwashed bodies. For the Eskimo has no opinion of water, and very seldom washes either himself or his clothing. Nor can an Eskimo swim. It would be too cold, he argues, to go into water without a fur coat; and with a fur coat who could keep afloat? And so he gives water the go-by and hob-nobs very contentedly with dirt. This condition, which sounds not only horrible but extremely uncomfortable to us, is viewed differently by those who are in a continuously frozen land. They know that to swim for more than a minute or two in water chilled by hundreds of icebergs would in most cases cause exhaustion, if not death, and they thus adapt themselves to their surroundings. Nansen, in referring to his crossing of Greenland, says:

> If we omitted the practice [of washing] during this whole period the omission was not without its reasons. Though it might be more becoming in us, and more in harmony with the conventions of the day, to confess that we found it unpleasant to go so long without a wash or change of clothes, it is better to acknowledge the truth, and to say openly that in these respects we felt entirely comfortable.

But if Eskimos do not venture their bodies actually within the sea they are as at home upon its surface as on land itself. Their boats, or *kayaks*, are still as described by Frobisher. These vessels, constructed of skin stretched tightly over a light frame, are made to accommodate one person only. He seats himself in a round hole in the centre of the boat, and, covering his clothing with a waterproof coat which fits so tightly round the opening where he sits that the boat is entirely watertight, he picks up a paddle and makes off. In this way he and the boat are one. No water can possibly enter the boat. Boat and man may even turn over in the water and emerge none the worse. It is not remarkable that in the early days an Eskimo in his *kayak* was frequently mistaken for a porpoise playing about in the sea. The one other boat used by the Eskimo—the *umiak*, or 'woman's boat'—is long and narrow and flat at the bottom. Men look upon the rowing of *umiaks* as "women's work," and the crews are normally feminine.

AN ESKIMO

The dress of the Eskimo varies very little wherever the tribe may be found. Men and women alike wear coats of fur or sealskin, and trousers of the same. In some places an inner coat or vest is worn, made from the feathers of hundreds of tiny birds, usually the Little Auk, beautifully stitched together, and exquisitely soft and warm. The feathers are worn next the skin, and an Eskimo wearing this luxurious vest beneath his fur coat may very well feel proud of his warm attire. Boots also are made of skin, with the fur inside, and often a tough string ties the bottom of the fur trouser to the skin boot, so that no biting wind can force its way inside. On his head an Eskimo wears a fur cap, and on his hands fur mittens. Man, indeed, copies nature; he sees around him animals protected from the cold by thick fur; so he kills the bear, and takes his skin to keep his own body warm. With a stone or snow house to shelter him, fur clothing to

FUR MITTENS

protect him out of doors, and plenty of seal meat or fish to eat, the Eskimo lives happily through a year the chief excitement in which is the coming and going of the sun. Four months of darkness must be endured out of every twelve, four months during which there will be days, and perhaps weeks, when no one will venture forth. But even these days of darkness have their joys. There is the strange, bluish glow cast by the moon upon the snow; there are the wonderful delights of the aurora borealis; there is the warmth of the friendly hut where the lamps are kept ever burning.

BLOND, OR COPPER, ESKIMO

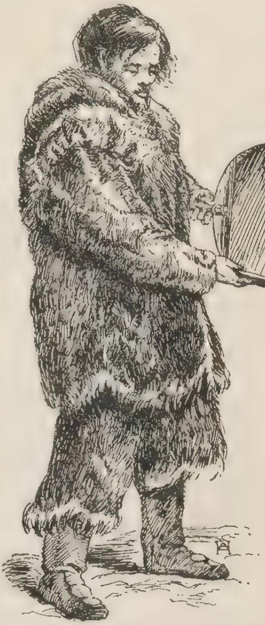
From a photograph by Stefansson in "My Life with the Eskimo"

The winter of 1910–11 was spent by Stefansson and his party in camp not far from the Coppermine River. Leaving this shelter on March 22, 1911, he set out on yet another Eskimo search. That there were still other tribes on Victoria Island he was convinced, but he had no idea in which direction to look for them. Making his way to Coronation Gulf, and from there pressing steadily north, he eventually was rewarded for his toil. On the shores of Prince Albert Sound, to the west of Victoria Island, he came upon the 'blondest' of the blond Eskimos. These people possess greater imagination than is usual with their race. They make longer journeys, have more general curiosity about life, and are altogether more intelligent.

In May Stefansson turned for 'home,' and by June 23 he was back at Langton Bay, and wintered (1911–12) half a mile east of Horton River.

The following March he started for Barrow Point, and by December he was back in New York, having been away four years and eight months. He brought with him not only many objects valuable to scientists but a vast amount of information which he afterward set out in his book *My Life with the Eskimo,* thereby adding enormously to our knowledge of these interesting people.

One of the great difficulties in arriving at precise knowledge about the Eskimos is the meagreness of their dialect. One word often has to do the work of several, and the impressions conveyed are, therefore, very vague. Nobody can express himself accurately if his language has no words capable of carrying his meaning; thus the Eskimo, questioned as to exactly how far he has gone, can only answer vaguely, "Not far," or "Very far." Thus, says Stefansson, "they give wrong impressions . . . because of their fatal lack of exact words for time and distance."



ESKIMO PLAYING THE KEELOUN

This native musical instrument is made by stretching a thin deer-skin upon a hoop of wood or bone about thirty inches in diameter. The player holds the handle and strikes, not the skin, but the hoop, dancing as he plays.

From Hall's "Life with the Esquimaux"

Arithmetic as we know it is entirely beyond them. Stefansson reports that, though the Eskimos living round the Mackenzie River can count up to four hundred, which they call "twenty twenties," the Copper Eskimos cannot count above six. From which it is easy to see the blunders they may make in reporting how many miles they have travelled, or how long it has taken them to cover the ground, how old they are, how far away it is to their hunting grounds, and the like.

Eskimos, wherever they dwell, are a simple people. They never go to war between themselves, though one tribe is by no means always charitable about another tribe; they have no standard of wealth, because possessions are of little use to them; they travel about continually, but never go very far, and they always keep within a few miles of the coast. It cannot, therefore, be said they are adventurous, and it is almost certain that, if they were left to themselves, centuries would still pass without their exhibiting curiosity enough to discover of their own accord the conditions in the interior of Greenland, or the whereabouts of the Pole. Life for them is largely a matter of food and shelter. Their wants are few, and so they are easily contented. Sir W. E. Parry, in his account of the Eskimos with whom he stayed in the neighbourhood of Melville Island, says that the parents usually displayed affection for their children, who, for their part, were on the whole very obedient and well-behaved. They are, he goes on,

ESKIMO CHILDREN DANCING

From a drawing by Captain Lyon

just as fond of play as any other young people, and of the same kind; only that while an English child draws a cart of wood, an Esquimaux of the same age has a sledge of whalebone; and for the superb baby-house of the former, the latter builds a miniature hut of snow, and begs a lighted wick from her mother's lamp to illuminate the little dwelling. Their parents make for them, as dolls, little figures of men and women, habited in the true Esquimaux costume, as well as a variety of other toys, many of them having some reference to their future occupations in life, such as canoes, spears, and bows and arrows. The drum or tambourine is common among them, and used not only by the children, but by the grown-up people at some of their games. They sometimes serrate the edges of two strips of whalebone and whirl them round their heads, just as boys do in England to make the same peculiar humming sound. They will dispose of one piece of wood on another, . . . in such a manner that the wind turns it round like the arms of a windmill; and so of many other toys of the same simple kind. These are the distinct property of the children, who will sometimes sell them while their parents look on, without interfering or expecting to be consulted.

ESKIMO GIRL

Some of their games are not very much unlike our own, and they are particularly fond of a variety of skipping. Both women and children play this, but it requires a good deal of skill to be expert. Two players hold the ends of a skipping rope and whirl the line round while a third jumps over it, first twice on both feet, then alternately with the right and left, and next four times with the feet slipped one behind the other, the line passing once round at each jump. After this the player performs a circle on the ground, jumping about half a dozen times in the course of it. This brings her to her original position, from which the process is repeated as often as it can be done without entangling the line. Those who succeed in the performance may justly feel proud of their achievement.

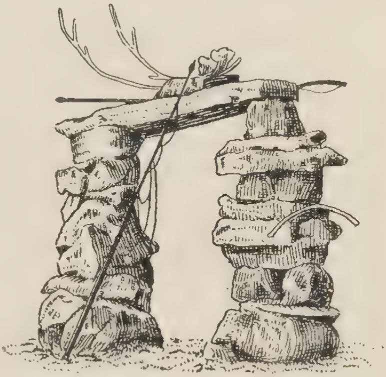
ESKIMO CHILDREN AT PLAY
From Kane's "Arctic Explorations"

Says Parry:

> When not more than eight years old, the boys are taken by their fathers on their sealing excursions, where they begin to learn their future business; and even at that early age, they are occasionally intrusted to bring home a sledge and dogs from a distance of several miles over the ice. At the age of eleven we see a boy with his watertight boots and mocassins, a spear in his hand, and a small coil of line at his back, accompanying the men to the fishery, under every circumstance; and from this time his services daily increase in value to the whole tribe.

Dogs play an extremely large part in the Eskimos' life. They drag the sledges, and in time of need they can be killed and eaten. This is a practice dating back very far, and Frobisher, returning home full of the wonders he had seen in the then unknown North, wrote graphically:

> They keepe certaine dogs, not much unlike wolves, which they yoke togither, as we do oxen and horses, to a sled or traile: and so carry their necessaries over the yce and snow from place to place. . . . And when those dogs are not apt for the same use; or when with hunger they are constrained for lacke of other victuals, they eate them: so that they are as needfull for them in respect of their bignesse as our oxen are for us.



AN ESKIMO GRAVE

After a sketch by Captain Lyon, R.N.

And so the Eskimos spend their days, in skin-huts in the summer and in snow-huts in the winter, spearing walruses, seals, and fish, or killing bears, and living so close to nature that they think of little beyond their daily needs. The aurora borealis lights up the darkness; they look at it and wonder. But their wonder soon passes; they are content to take life as they find it, without bothering their heads overmuch as to its why and wherefore.

CHAPTER V

GREENLAND EXPLORED

GREENLAND has lured many to the exploration of its secrets. After Hudson there was a long period during which very little was learned of the great island, but the second decade of the nineteenth century saw William Scoresby charting the east coast. Dr E. K. Kane (1853–55) explored the Smith Sound coast, and discovered the Humboldt Glacier. Captain C. F. Hall, Lieutenant L. A. Beaumont, and Lieutenant J. B. Lockwood also added considerably to the map of Greenland. Much of the east coast was charted by G. C. Amdrup (1898–1900), M. Erichsen (1902), E. Mikkelsen (1909–12), de Quervain (1912), and Koch (1913).

In the present century Greenland captured the imagination of Knud Rasmussen, who lived during his childhood in South Greenland. In 1910 he set up a base and trading centre, which he called Thule, on North Star Bay, and from this starting-point he has made important journeys both into the interior of Greenland and along the difficult north-west coast. As leader of the first Thule expedition he crossed the inland ice from west to east, and back from east to west, during 1912–13; in 1915 he explored Melville Bay; 1916–18 found him up in the rigorous north of Greenland; in 1919 he made a special expedition to East Greenland; and in 1921–24 he conducted the fifth Thule expedition from Greenland to the Pacific Ocean. Thus nobly has he redeemed that early vow, made as a boy of twelve, when, fascinated by the stories told about the Polar Eskimos living in the north of Greenland, he declared, "I must go to those people."

In his intensely interesting book, *Greenland by the Polar Sea,* Rasmussen gives a graphic account of the expedition of 1916, the main object of which was to chart and survey the "last unknown reach of Greenland's north coast on the stretch between St George Fiord and de Long Fiord." Rasmussen also wished to investigate still further the habits and customs of the Polar, or Highland, Eskimos, a people living north of Melville Bay, and about whom there was still much to learn. Did they, for instance, build winter houses? In Peary Land (which had been discovered by the explorer Peary in his 1892 expedition) tent-rings had been found, but no winter houses. What, therefore, were the general habits of these wandering Polar people? Rasmussen set himself to find an answer to this question, and at the same time to investigate the coastline along which these Eskimos wandered.

Like Stefansson, Rasmussen sincerely believes that successful exploration can only be carried out by adopting the habits and dress of the Eskimos, and by hunting for food while on the march. This method, of course, greatly lightens for the Polar explorer the burden that he and his men have to carry. Like Stefansson, too, Rasmussen knows the Eskimos to be a "genuinely happy people," and so, in approaching Greenland, he came with a mind undisturbed by fears as to what lay before him. "With occasional breaks," he says, "I have lived with these people [the Arctic Highlanders] since 1903, and I have learned to love them as highly as I admire their remarkable ability to live the life of those harsh regions."

Many explorers have gone out expecting to endure great hardships, and determined splendidly to do so, but those who follow Stefansson are unencumbered by such fears.

They look upon the Arctic as a friend: and such they find her. This difference in mentality, which cannot be assumed by every one, has far-reaching effects, and is most valuable in its influence upon any exploring party. The success of every undertaking must depend to a large extent upon the steady hopefulness of the leader, for there is nothing more infectious than despair. And how splendidly the names of these Polar explorers—from Frobisher to Scott, Amundsen, Stefansson, and the rest of their splendid fraternity—stand out! How their courage puts us to shame!

Rasmussen was happy in establishing very early friendly relations between himself and the Polar Eskimos. "No hunter," he says, "exists up these parts with whom I have not hunted, and there is hardly a child whose name I do not know." This being so it is easy to understand his enthusiasm for them. He finds them a happy, courageous people, always ready to set out on an adventure, *provided they have a leader.*

To Peary also the Eskimos owe a great deal. He was their first great teacher, and, as Rasmussen puts it, "Peary developed in them the white man's brain, which of course signified great progress in their material existence." Peary, who became an explorer by happening to read a book that lit up his imagination, is supreme among Arctic explorers, and his many journeys toward the Pole had their culmination in the fine achievement of 1909. Between this date and the year 1886, when he made his first visit to Greenland, he proved himself a most daring and tireless explorer. But side by side with his daring was a streak of profound common sense, and it was the union of these two qualities that enabled him to succeed in so many wonderful ways. If he gave the Eskimos new ideas about life, he studied their age-old habits so sensibly that he learned from them how to live in the Arctic with

STUDY OF AN ESKIMO

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From "The People of the Polar North," by Knud Rasmussen

such satisfaction that it became to him 'home,' and thereafter he was never long away from those regions without a strong desire to return.

The Polar Eskimo is a restless individual. He lives a gipsy life, never staying very long in any one place. In the spring a general move takes place, and everybody packs up and goes to a new home. Along the coast are little stone houses, built by industrious but forgotten ancestors, and so durable that a very little patching keeps them in repair. These houses are common property, and when one tribe strikes camp, and the houses are evacuated, another group comes along to fill them. So that a sort of Family Coach goes on during this part of the year.

In addition to these stone houses, snow-huts are built, some being erected in as little time as half an hour. They are considerably more comfortable than they sound. "No block houses," says Rasmussen, "can compete with a well-built snow house as regards warmth." But it is not all comfort and merriment, for Rasmussen also observes: "Oft times a whimpering child is transported across wild glaciers in darkness and cold, ending the toilsome day in a cold, newly built snow-hut. No wonder that he, or she, frequently becomes crooked with rheumatism at an early age."

It was from among these simple people, at Etah, that Rasmussen set out from Thule on his long journey to Cape Morris Jesup. An Eskimo, making his farewell, will often say, "It has come to pass that a man sets out on his travels," and in Rasmussen's case this was literally true. He set out on a great and dangerous journey to travel by sledge to the north coast of Greenland, leaving Thule on April 6, 1917, with twenty-seven sledges and 354 dogs. In addition to Rasmussen, the party consisted of Dr Thorild Wulff, Lauge Koch, Hendrik Olsen, Ajako, Nasaitsord Marsuk, called "Bosun," and Inukitsoq, called

"Harrigan." How entirely Rasmussen had identified himself with the Eskimos is plain from his final orders: "There must be no difference in standing between the Eskimos and ourselves, the Eskimos being members of the expedition with equal rights and duties to the scientists, and no man but the leader must have command over them."

Beyond Cape Inglefield they met the first Polar ice, which in Kane Basin is "often so tall that one must hew a way through with axes. The heavily loaded sledges have to be slowly and carefully worked across so that they shall not be crushed by a sudden fall from a height of several metres."

Northward they went, looking all the while for traces of Eskimo occupation. Rasmussen, describing the ice-bound shores of Kane Basin, says, "As a rule the winter ice lies untouched until the following autumn. By the end of August or the beginning of September the rivers melt round basin-like holes in the ice at their mouths, and a fissure which during summer-time has formed off Cape Russell widens out broadly. This is all the open sea they have." Yet even in these severe regions were ruins of houses, tent-rings, and meat-pits. By April 19 they had reached the middle of the bay and had an excellent view of the great Humboldt Glacier, first seen by the explorer Dr Kane, who thus describes it: "Here it lay, plastic, movable, a half solid mass, crushing out life, swallowing cliffs and islands, and forcing its way with an irresistible movement down through a frozen sea." The region beyond this great glacier was unknown to the Eskimos, who called it merely "the country lying on the other side of the glacier," and there was much excitement as to what they should find there. On the shores of Benton Bay, to the north of Peabody Bay, there were ruins of huts, from which Rasmussen was able to argue positively that Eskimos had once lived north of the Humboldt Glacier.

In this neighbourhood a bear and a hare were shot, and a falcon was seen. But unexpected provisions were discovered two days later when they came upon six boxes each containing "four nine-pound tins of Australian mutton, fresh and delicious as if it had been left only the previous day." This treasure-trove was part of the stores left by the Nares Expedition in 1875–6. A little farther on, beyond Thank God Harbour, they came upon signs of earlier explorations—the grave of Captain C. F. Hall of the U.S.S. *Polaris* (1871) and those of two seamen, Paul and Hand.

Those memorials of brave men beaten by the Arctic served only to spur Rasmussen on northward, ever northward. The ice round Robeson Channel made sledging a terrible undertaking, but by midnight on May 2, 1917, they reached Cape Sumner. So worn out were the dogs that on pulling up they lay where they were, "never stirring all through the night from the spot where they flopped."

Rasmussen, surveying the bleak, inhospitable coast, reflected upon the courage of Nares, of Hall, and of those others who had explored so nobly round this coast. "This great Polar Sea," he writes, "claims a sacrifice from every man who tries to unveil its secrets."

Still farther north he found under a cairn a bottle with a record by Peary dated June 8, 1900, and stating, "Am passing here on my way to Fort Conger." How strange and wonderful the emotions stirred by the discovery of these traces of earlier explorers in a region that appears to be the special preserve of ice!

At Dragon Point, some few miles farther north, Rasmussen made a camp, and here the Spirit of the Past came out to greet those children of the Present. "Here more than anywhere," writes Rasmussen, "did we feel the contact with those brave Englishmen whose trail we had hitherto followed." Beaumont (of the Nares Expedition) with a company of twenty-one men had been here in 1876, and Rasmussen realized, as few of us can do, how much they had had to suffer.

The camp at Dragon Point marked the end of the first stage of the present expedition. From now onward they might reasonably hope to find food by hunting. Stores were deposited in a marked spot, and everything unnecessary was abandoned. The team of dogs was reduced to seventy, with six sledges to be pulled. Their faith that they would find game for food was presently justified; there were hares in plenty, ptarmigan, and at last the traces of musk ox that Rasmussen had so confidently expected. This fresh meat was of immense value to the party, and did much to restore the health of members of the expedition.

But their good luck in hunting did not continue, and at intervals dogs had to be killed for food. Summer, however, was at hand, and June found them in Peary Land, still plodding north. Not yet had the flowers that brighten for a brief period these frozen lands sprung into blossom. They found Polar willow, poppies, saxifrage, and cassiope, but as yet "withered with winter." Summer is long in coming, and swift in going, in these places of the far north.

Snow, freezing winds, and the problem of worn-out dogs (now reduced to ten) tried to the full the endurance of them all. By the calendar it was June, loveliest of all summer months, but the Rasmussen party was buried in a snowdrift so deep that only the ridge of their tent was visible. The dogs had "given up entirely and were now trying merely to keep warm, rolled up in a ring with heads buried between legs and tail." A new fiord had been discovered, but even this excitement did not succeed wholly in keeping up the spirits of the party.

Then suddenly their luck turned. Seals and hares were found and killed, a flock of Arctic gulls wheeled by, and hope rose again in the explorers. A few days later the sun poured down, and, instead of being half frozen, they found themselves steaming with heat. Thus they reached Cape Salor, where they found in a depot left by Peary a few tins of pemmican. From here the hunters go out hunting, but return empty-handed. For sixteen days they have lived entirely on dog. In such circumstances it is hard to keep cheerful, but no one thinks of giving up. Then the capture of a giant seal, a goose, three hares, and some ptarmigans makes every one feel better, and once again, like gipsies, they take to the road. They cross Jewell Inlet, pass Cape Wykander, and turn into the mouth of de Long Fiord. Under a small beacon here they find a record left by Lockwood, during the Greely Expedition (1881–84), an expedition nobly conceived and nobly carried out, but ending in tragedy, only six men out of twenty-four surviving. Along the shores of the fiord rose high mountains, and from these Rasmussen hoped to get a view of the territory he desired to map. With this purpose in view, Koch and Ajako the next day set out to ascend a peak to which they had given the name of Thule Mountain. Their reports were so satisfactory that Rasmussen, following in the tracks of Koch, records:

> When at last I got a full view of the surroundings I nearly dropped with surprise at the enormous Arctic landscape which lay before my eyes. On one hand the Polar Sea the enormity of which I have often described; on the other Peary Land, which I knew from Independence Fiord, but which here, towards the ice-bound ocean, had quite another winter character than it has in its eastern regions during the same season. The land was everywhere covered with snow, with glaciers on all tops, and every hope of finding hunting ground . . . was torn up by the root.

This vantage-ground being so excellent as a viewing-spot, Rasmussen was able to come to the satisfactory decision that to go on farther was unnecessary. He writes:

> Koch and I were at last standing on the summit of the mountain from which the work of the expedition could be completed. This fiord was the northernmost goal of our voyage. . . . We all felt that inexpressible joy known only to him who has shouldered a task and carried it through in face of all difficulties.

Two new fiords were given names—Thomsen Fiord and Bernard Böggild Fiord—thus marking the climax of the undertaking. Says Rasmussen:

> As far as our work was concerned, I had arrived at a result that could not be elaborated by a continuation of our excursion: for the possibility of a migration of Eskimos north of Greenland had been disposed of by the natural conditions which we found here by the last great fiord on the north-west coast. The land offers no means of subsistence, and the inner regions of the fiord, being covered with floating inland-ice, forbid the seal hunt, so essential to all Eskimo life.

For many reasons Rasmussen thankfully turned back. Under the June sun the snow was melting, and this brought its own special anxiety. At any moment the sledges might be sucked down into the slush, from which they could only be rescued after much effort. It was not at all easy going. Often they had to wade knee-deep and their clothing was continually wet through. Food had to be carefully handled, and on Koch's birthday, which fell in June, the party presented him with a few lumps of sugar, a much appreciated and, at the moment, a very valuable offering.

A month later they reached Summer Camp, where they found brightly coloured flowers and deep grass in abundance. But so bad were the conditions for marching that some of the party advised staying where they were till the water should freeze over again. But Rasmussen opposed this plan; his idea being, "Homeward as quickly as possible in spite of all!"

The passage over Sherard Osborn Fiord was accomplished at much risk. At times the situation became desperate; the ice was so rotten that to venture over it was dangerous. "Our lives were now at stake; that was the brutal truth," wrote Rasmussen. July closed in a burst of rain and snow; they were weather-bound and starving. Misery, that spectre ever stalking behind the explorer, now came boldly forward. One of the company, brave Hendrik, going out after food, never came back. The spirits of the party sank still lower. Across the Daniel Bruun Glacier (4200 feet above sea-level) they miserably toil. They are still very far from home. Day after day the same weather, the same wind. Every hour the situation grows more serious. Can they hold out? But on August 24 they reach the edge of the glacier, and Rasmussen writes:

> We have reached land! We have returned to food and to life! We have escaped from the terrible embracing of the inland ice! The expedition and all its results are saved! Only one who has experienced excitement similar to that of the last few days will be able to realise the feelings which flow through us.

But, though the worst was over, Etah was still 125 miles away. Most of the party were too exhausted to accomplish this, and Rasmussen and Ajako, the Eskimo, set out to get help. This journey began on August 25 and ended, after much adventure, in Etah on August 30. The next day relief sledges left for Inglefield Land, to rescue the remaining members of the party.

On September 10 the sledges returned bringing Koch, "Harrigan," and "Bosun." Wulff they did not bring; he had died, as many another Arctic hero has, of hunger, nobly and alone. Choosing a quiet nook he had settled himself, saying quietly: "No, I cannot continue; there is an end to it now." His distracted comrades were forced to leave him and to go in search of food; and when help was found Wulff was dead. The last entry in his diary runs: "Lay down at 7 P.M., for I will not hamper the movements of my comrades on which hangs their salvation." To his parents he wrote: "I await death with a perfectly calm mind, and in my heart is peace."

The final stage of the journey from Etah was safely accomplished, and on October 22, 1918, Rasmussen's party once more reached Thule. Rasmussen says that on their arrival "it was as if all houses suddenly sneezed at once; from every entrance a crush of people poured out, stormed toward us and surrounded us. . . . I was back again in Thule."

Since this journey Rasmussen has conducted yet another journey from Greenland to the Pacific Ocean (1921–24), the results of which are of even greater importance to science and in the history of exploration.

In concluding this chapter reference may fittingly be made to Spitsbergen, a group of islands lying east of Greenland, discovered by William Barents in 1596. Later Baffin, Phipps, Scoresby, and Parry added to our knowledge of this territory. In the second half of the nineteenth century the Swedes undertook systematic exploration, a notable attempt being N. A. E. Nordenskiöld's of 1872.

CHAPTER VI

PUSHING NORTH IN THE NEW CENTURY

THERE is a great deal of truth in the proverbial saying that one thing leads to another. And so, when once men had accepted the idea of investigating the Arctic regions, and when once there was solid support for those willing to risk themselves in adventuring thither, discovery quickly followed discovery. The map-makers found themselves filling in many blank spaces. The Arctic region was no longer a semi-fabulous region; its land and its water had both been considerably investigated. Davis Strait, Hudson Bay, Baffin Bay, as well as many of the smaller waterways, such as Smith Sound, Jones Sound, Lancaster Sound, Frobisher Strait, were now known. Something was definitely known, too, of Greenland: of the ice-bound seas off the east of Greenland, and between Spitsbergen and Novaya Zemlya. The Arctic had not been conquered, but it had been proved that it was possible for seamen to go there and survive—possible even for them to live through the dark, terrible months of an Arctic winter. The logs and the charts brought back by the sailors were positive proof of their investigations. The 'unknown' North was no longer entirely unknown; the mystery had been lifted a little, though there was (and is) still much to be revealed. Meanwhile the forerunners had done their work magnificently; Hudson had penetrated beyond latitude 80° N.; the path was cleared for both the trader and the future explorer.

Trade stepped in, and thus the whaling industry was established, and during the seventeenth and eighteenth centuries regular fleets were organized, and hundreds of whaling boats sailed north, not to explore, but to capture whales. In the pursuit of this trade much knowledge of the Arctic was acquired, but the motive was mainly trade. Yet knowledge is knowledge, however it may be acquired, and this practical information gained by men who braved the North for the sake of earning their living has been invaluable. All the investigations of the North, since the earliest times, have had as their true aim, not so much the reaching of one particular spot as the careful observation of the whole region; for until every inch of the globe has been investigated, and the information thus gleaned has been sifted by men of science, our knowledge of the world must remain incomplete.

HUNTING WALRUSES

The successful handling of the whaling industry by both Dutch and English traders, particularly during the years when the Georges were ruling England, made many business men still incline to the belief that an easy passage to India by way of the North might yet be found. In a fit of enthusiasm in 1743 the English Parliament offered £20,000 for the discovery of a North-west Passage, and in 1776 it promised a sum of £5000 to the first ship to sail beyond latitude 89° N. At that date Hudson's 80° 23′ N. remained the record, though he had made it as far back as 1607.

Other countries were equally enterprising, and in 1740 Vitus Bering, a Dane employed by Russia, approaching from Okhotsk in Asia, sailed through the strait which now bears his name (although it was first navigated by Russians a century before). This was a rediscovery of first-rate importance, as it provided a new entry into the Arctic; and if an entry then, of course, an exit. It was now clear that it was possible to pass by means of this strait from east to west, or from west to east. A glance at a map of the Polar regions will show at once that at this point the land running so closely round the Arctic is divided by this strait discovered by Bering. It is a narrow piece of water—at its narrowest only thirty-five miles across—but it divides America from Asia, thus separating two great continents. But, while it forms a doorway to the Arctic, Cook, investigating it in 1778, found the sea on the other side so choked with ice that he was forced to withdraw. In each of the three great entries to the Arctic—Bering Strait, Davis Strait, and the Greenland Sea—the path is blocked against invasion; all who approach, desiring to enter, are certain of an icy reception. Liachof, a Russian trader, following by dog-sledge the tracks of a herd of deer north from Siberia, discovered two islands—Liachof and Maloi—sixty miles from the continent. He visited the islands (now known as New Siberia) by boat three years later, in 1773. In 1885–86 Dr Bunge and Baron von Toll, also Russians, explored thoroughly these and other islands, their contribution to scientific knowledge being considerable.

The money prize offered by Parliament, and the general encouragement of exploration, led to an expedition in

1773 under Captain Phipps, who sailed by way of Spitsbergen, and reached latitude 80° 48′ N., when he was confronted by an ice-pack of enormous strength. Phipps sought gallantly for a means of circumventing this colossal barrier, but without avail, and he was forced to come back, having passed very slightly beyond Hudson's mark.

But in 1806 a new record was established by William Scoresby, a record that is all the more remarkable because Scoresby was not more than seventeen at the time. Seventeen, and an Arctic explorer! And, more than this, an Arctic explorer who observed so accurately, and recorded so carefully that his book *An Account of the Arctic Regions, with a History and Description of the Northern Whale Fishery*, which was published in 1820, when he was thirty, is still an authority. Can you picture him, young and eager, in those desolate seas, watching every inch of his journey with an eye that missed nothing? And can you see him arriving back in England, and returning quietly to Edinburgh University, where he industriously resumed his studies?

Scoresby was clever enough to realize that the information he had gathered abroad could best be understood if he acquired a knowledge of what science had already sifted and preserved. So, for the time being, the navigator became the modest student, and the boy who at the age of eleven had accompanied his sailor father on a journey to Greenland, and at seventeen had set up a new northern record, began quietly to codify the impressions he had gained, and to compare his own discoveries with those already recorded. Then in 1807 he was off again, bent upon investigating still further the natural conditions of the Arctic. Again and again, till in 1822 he made his last voyage to Greenland, he went north, bringing back from each new expedition a store of valuable facts.

One of the most remarkable of his observations was the discovery that in the Arctic seas the temperature of the water after a certain depth becomes warmer, with the result that a warmer area is sandwiched between the cold top layer and a cold bottom layer. "On my first trial made in the summer of 1810," he states, "in latitude 76° 16′ N. longitude 90 E. the temperature at a depth of 1380 feet was found to be 33·3° (by the water brought up), whilst at the surface it was 28·8°." This very interesting fact, minutely investigated by recent explorers, was for the first time put on record by Scoresby as a result of that wonderful early voyage of his.

HUMMOCKS

These occur at the margins of the floes, where their ragged edges have come into grinding contact and the ice piles up into ridges.

From Kane's " U.S. Grinnell Expedition in Search of Sir John Franklin "

He was still only thirty-four when he decided to go to sea no more, and astonished every one by taking orders. He continued his active interest in science, and received many honours from learned societies. Later in life he visited America and Australia, and throughout the whole of his career he was immensely interested in every kind of reform. It is as a navigator and scientist that he is best remembered. We think of him as William Scoresby, preacher, reformer, scientist; but, most of all, as William Scoresby, the boy who, in 1806, at the age of seventeen, when chief officer of the *Resolution*, reached latitude 81° 30′ N. and thus made a new mark on the map recording man's progress toward the Pole.

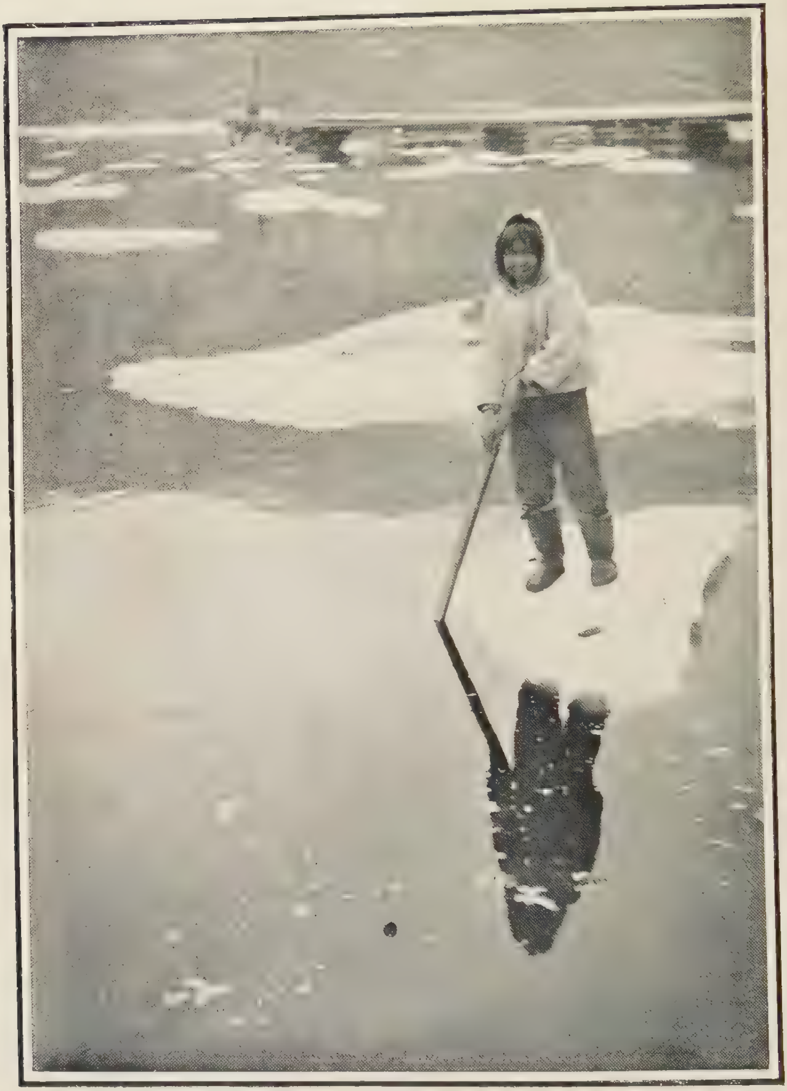
CHAPTER VII

EQUIPMENT

ANYONE going on a journey, however short, is bound to think about luggage. Even a tramp has his parcel, or a climber his rucksack, while some people who make long journeys, even if they are going into a country with plenty of shops, load themselves up with baggage. If they do this when travelling to places where they can readily buy, according to their needs, think how carefully luggage must be chosen when the journey is to be made into undiscovered regions where shops are unknown! Every detail must be thought out in advance—shelter, food, clothing, three things which are always of vital importance, and the insufficiency of which brings much more suffering in the Arctic than in a warmer climate. Once you have parted with civilization mistakes cannot be put right. There are no handy telephones, no post-offices. Whatever the explorer has forgotten he must do without. And so before he starts he must devote much time to thinking out what he will take with him. Upon his equipment will depend not only the success of the enterprise but his own salvation. His vessel is thus his first consideration, and, having satisfied himself that he has got a strong, well-balanced, seaworthy ship, constructed to plough through ice as well as through water, and strong enough to withstand the pressure of the ice, he turns his attention to his stores. These he considers item by item, and many a day passes before he is satisfied with the contents of his floating warehouse, which has as many departments as a big shop. Here is his provision-merchant,

AT THE END OF THE JOURNEY

From "Among the Eskimos of Labrador," by S. K. Hutton (Seeley, Service and Co., Ltd.)



PUNTING ON BROKEN ICE

This is a favourite game with the Eskimo boy in spring.

From " Among the Eskimos of Labrador," by S. K. Hutton (*Seeley, Service and Co., Ltd.*)

his chemist, his ironmonger, his clothier, his butcher, his baker, his bookseller, and stationer. Every emergency must be anticipated and considered, every improbable situation imagined.

These elaborate preparations, which in view of our knowledge of the Arctic seem obvious, are very different from those made in the days of Elizabeth. The early adventurers took with them little in the way of food except salt meat, hard biscuits, butter, cheese, and ale. This diet was by no means a healthy one, and nearly every sailor suffered from scurvy, caused by the lack of fresh meat, fruits, and vegetables. Their clothing, too, was highly unsuitable, much of it being cotton, with 'rug' coats as an extra protection. How could men who had never seen the great ice-floes, never even lived in a land where there was much snow in winter, know how to equip themselves against the terrors of the Arctic? How could they prepare themselves against disease in a day when blood-letting and a few 'simples' were all the known remedies against illness? Magnificently ignorant, they went off to explore the Polar seas, unaware of the dangers they were to meet and comforting themselves with the reflection of Sir Humphrey Gilbert that "We are as near to heaven by sea as by land." Ill-clothed and ill-fed, they 'travelled light,' and yet they did not omit to include in the ship's company musicians to charm the "savages," and in their cargoes toys and trifles with which to win their friendship. That any ever returned from these rigorous early voyages is a proof of the splendid physique and the fine mental balance of those first adventurers northward.

With every voyage there came an increase in knowledge. Journeys undertaken lightly in cockleshell boats by and by gave way to properly organized expeditions. More and better supplies were provided. Medicine had leaped ahead as a science, and there were now doctors available. Scurvy was still a dreaded foe, and to counteract it large supplies of lemon-juice were carried. Thus after passing through the Elizabethan stage, when there was practically no equipment, and a later stage when expeditions were overloaded with heavy, awkward appliances, a new stage was reached in which the explorer realized that, though necessities must be taken, it was also essential that he should be as little burdened as possible. The object was now to find things that were serviceable but of little weight. The heavy boats and the cumbersome sledges that had harassed the efforts of the explorers at the end of the eighteenth and the beginning of the nineteenth centuries were abandoned. The light *kayaks* used by the Eskimos were adopted; equally light sledges were employed; dogs were used more freely; the food was supplemented largely by fishing and by shooting game when it could be found. For the Arctic region is by no means without wild animals. There is indeed in most places an abundant supply of food for man—bears, musk-ox (*Ovibos*), reindeer, Arctic hares, and also seals, walruses, and many kinds of birds. So that the traveller who is handy with his gun will usually find meat with which to satisfy his hunger.

A REINDEER

This splendid, and apparently almost miraculous, supply of food is due to the fact that the Arctic possesses a short but intensive summer in which many hundred species of plants can flourish. As far back as the time of Charles II travellers knew of these plants, which they observed to be admirable for the "nourishment both of Man and

Beast." In this respect there is a great difference between the North Polar and the South Polar regions. In the South there are no land animals, and the explorer will look in vain for a glimpse of musk-ox or bear at which to point his rifle.

And yet, in spite of the wild life in the northern region, the explorer of these vast wastes is often enough reduced to starvation, and more than once leather straps and the soles of boots have been gnawed in the hope of satisfying hunger. But the development of modern hunting weapons and the adoption of Eskimo hunting methods have made the possibility of starvation less likely. Since the terrible fate of Franklin in 1847 every precaution has been taken to prevent catastrophe. Depots are established at known points, so that in an emergency explorers can return thither; for it must be remembered that to an explorer, the road *back* is even more important than the road forward. Invention after invention is making the task of the explorer easier—aeroplanes can accompany him, and act as scouts; wireless can keep him in touch with mankind; he has a thousand aids that were never even dreamt of in the days of John Davis. The explorer of our day has on his ship a degree of comfort, and even luxury, that was unknown not only to seamen in the middle ages, but to the wealthiest nobleman at home. She is warm and dry, cosy, well heated by stoves, and kept bright by electric light. He has every kind of medicine in a compressed form; his food and clothing are of the very best; and when he reaches the frozen regions he has rifles with which to kill the animals whose death may purchase his own life. Peary gives the following vivid picture of such an occasion:

> Never shall I forget that time and season. Three exhausted men and nine starved dogs, standing there in the gaunt frozen desert. . . . Then! On a little terrace of the

cliffs, a group of black spots, which a glance through the binoculars showed to be musk-ox. A successful shot meant life, for a time at least. While failure meant death. . . . They were not game for us but meat! Every nerve and fibre in our gaunt bodies was vibrating with a savage lust for that meat—meat that should be soft and warm, meat into which our teeth could sink and tear and rend, meat that would not blister lips and tongue with its frost, nor ring like rock against our teeth. . . . I can scarcely realize as I write these lines what absolute animals hunger makes of men, and yet I can say truthfully, never have I tasted more delicious food than was that tender, raw, warm meat. . . . I ate until I dared eat no more, though still unsatisfied.

MUSK-OX OR OVIBOS

From Stefansson's "The Friendly Arctic"

Dogs, which now figure so largely, in any Polar expedition, are useful in two ways. They can draw the sledges over the ice, and, in emergencies, as the supplies of food diminish, they can be killed one by one to afford food for their starving masters. This practice, which explorers copied from the Eskimos, enabled Nansen to survive the last lap of his "farthest north" achievement, and by its aid Peary triumphantly reached the North Pole, and Amundsen the South Pole. But Scott, who was extremely tender-hearted, could never reconcile himself to the practice, and was happier without dog-pulled sledges. One of Stefansson's greater achievements was to start out in 1914 with seven dogs and return some three years later with six of them in perfect condition. This is a contrast to Peary's estimate of a loss of 60 per cent. of his teams as being inevitable. Dogs thus have a share in the great Polar discoveries; and though, when the goal is in sight, and hunger is pressing, they are often sacrificed to provide a meal, their share in the achievement must not be forgotten.

In appearance differing very little from wolves, these dogs have many of the characteristics of the wolf from which they have sprung. They are in no sense 'tame,' and seldom show affection for their masters. Force is the only way of controlling the wild, howling beasts, with jaws ready to swallow anything. Yet M'Clintock, who was one of the first to employ whole-heartedly the dog-drawn sledge, mentions in his *Narrative of the Discovery of the Fate of Sir John Franklin and his Companions* that a full meal of salted provision will kill an Eskimo dog, which thrives on almost anything; from which we may draw the conclusion that too much salted meat is as harmful for beast as for man.

ESKIMO DOG

And so when the explorer, parting for the time being from his ship, pushes off across the ice, he takes with him as his chief standby a sledge drawn by dogs. On this is piled his waterproof coat, his fur-lined sleeping-bag, his extra supplies of warm clothes, his tools, his medicines, his snow-shoes, his food, his cooking stove, his matches, needles, and cotton, his gun, his camera, his writing materials, and many other articles; and, in addition to all these, his *kayak*. Thus he sets out, equipped with all the contrivances of modern science, and yet resting in the main on the age-old helpers of the Eskimos—dogs, sledges, *kayaks*.

CHAPTER VIII

THE VOYAGES OF ROSS AND PARRY

AT the end of the eighteenth century and the beginning of the nineteenth the attention of England was centred chiefly upon France. The French Revolution and the subsequent domination of Napoleon caused anxiety throughout Europe, and it was not until after the Battle of Waterloo that the burden of suspense was lifted.

But once the danger was over the lure of Polar exploration again made itself felt, and in England Sir John Barrow, himself a great traveller and later the founder of the Royal Geographical Society, urgently pushed forward the claims of Arctic exploration. But an Arctic expedition is a very costly business, and unless it is well supported, either with public funds or by the generosity of some rich man, it has small chance of success. Sir John Barrow was well aware of this, and he was equally alive to the value of further investigating the still only partly known Polar regions. He therefore turned to Parliament, and it was largely through his influence that the English Government in 1818 offered a reward of £5000 to the navigator first reaching latitude 89° N., or beyond longitude 110° W.

This fine encouragement gave fresh life to exploration, and as a result several expeditions were arranged. On one of these, consisting of two whaling boats under Captain (later Sir John) Ross, as second in command went William Edward Parry, then aged twenty-eight. They sailed in 1818, having as their object the exploration of the great bay discovered by Baffin in 1616, for, although Baffin Bay and Bering Strait which, roughly speaking, are the two ends of the North-west Passage, had been discovered some centuries earlier, what lay between them was still unknown. The intention of the expedition of 1818 was to sail to Baffin Bay and then push westward by means of the North Water, one of the three great currents for which Baffin Bay, that great stretch of frozen sea, is the receiving basin. The first of these currents tears from the north down Smith Sound, and, entering the bay, so disturbs the ice that it forces an opening known as North Water; the second, pushing through Lancaster Sound and across the bay, clears a passage known as Middle Water; while by way of Eclipse Sound comes a third stream that forms the South Water. There are thus three clearly defined routes which usually afford a passage across the bay—'usually' because "seasons," says M'Clintock in his *Narrative of the Discovery of the Fate of Sir John Franklin and his Companions*, "do occur when none of these routes is practicable."

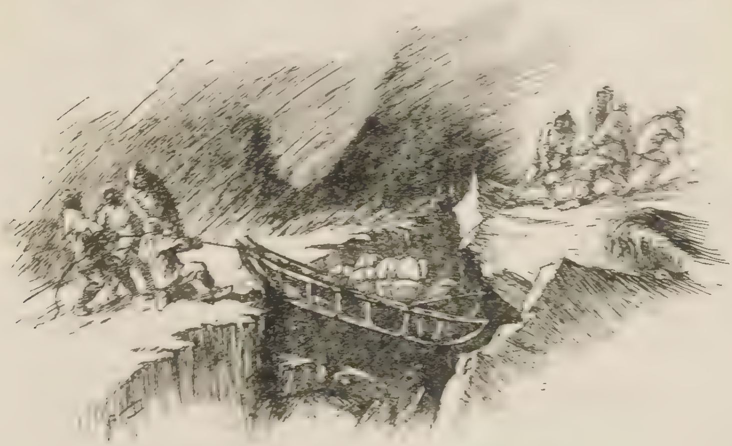
AN ICE-COLLAR IN BEAR SOUND
From Hall's "Life with the Esquimaux"

It was through the North Water that Ross and Parry now steered their course, their observations being chiefly fixed on the narrow straits lying to the west of the bay.

Ross thought these were mainly inlets running up into the land, but Parry hoped to find among them, possibly through Lancaster Sound, a waterway that would ultimately lead into the unknown region between Baffin Bay and Bering Strait. The expedition ended rather indefinitely. Ross gave it as his opinion that there was no outlet there to the west, but Parry stuck to his opinion that a passage could be found through Lancaster Sound, and declared that "attempts at Polar discovery had been hitherto relinquished just at a time when there was the greatest chance of succeeding." Interesting light has recently been shed on this point by the discovery of Parry's original map, which has just turned up among some papers in one of the Government offices. Very probably it was deposited there by Parry's superior officer, and has lain there since and never been published. Parry's enthusiasm delighted Sir John Barrow, and with his support Parry set off again in the following year (1819) in the *Hecla*, this time in command of the expedition.

Up into Baffin Bay he sailed once more, and this time he achieved at least part of his ambition, for he pushed a way through Lancaster Sound till he reached Melville Island, the 'furthest west' mark for many a year to come. But baffled by ice, even after spending a winter on Melville Island, Parry had to give up his hope of getting as far as Bering Strait, and he returned to England in 1820, having qualified gloriously for the prize of £5000 offered to any ship reaching 110° W.

The flame of his enthusiasm thus fanned by public delight, Parry made two more voyages west, but on each occasion he found his progress barred by ice. Thus baffled in the frozen west, his mind turned elsewhere, and he determined to try for the Pole itself. His record as an explorer now stood him in good stead, and in 1827, with a promise of Government support, he started on a journey to the Pole. His proposal, which had official approval, was to travel by way of Spitsbergen. He would search for a wide plain of ice over which the expedition could travel, dragging with them sledges on which they would convey stores and also boats to be used when they found 'lanes' of water dividing the ice-fields. This was the germ of the modern method of exploration, though the most recent explorers have substituted a light, dog-drawn sledge and the Eskimo *kayak* for the extremely heavy sledge-boats which Parry and his companions themselves dragged. To pull a heavy sledge mile after mile, day after day, means very hard work, and it is astonishing to reflect that it was not until within comparatively recent times that explorers, when crossing tracts of ice, have adopted the plan of taking as *few* men as possible and as *many* dogs as possible—the dogs serving *in emergency* as food.



DRAGGING A SLEDGE OVER A CREVASSE

Having reached latitude 81° 31′ N., Parry left his ship inside a barricade of ice, and with his companions began the laborious journey on foot. Forward went the little company of men, pulling the heavy sledges to which were yoked cumbersome boats. They groaned under the strain, but their courage urged them forward, and, like all true explorers, forward they went. For twenty-six days they tugged, and stumbled, and groaned, and strained, their faces flushed with effort, their jaws firm set. But there are occasions when courage is needed to face facts as well as dangers. The present was such a one. To his dismay Parry discovered that in spite of all their gigantic efforts they were making no headway; they were, indeed, losing ground with every step they took. The reason for this was that, far below the ice, ran a powerful current, flowing swiftly south; without ever a pause it went on its way south, ever south; and so swiftly did it run, and so great was its power, that it bore with it the floes over which Parry and his men were trudging north. The current was stronger than Parry; it needed no rest; it never grew tired. Although Parry was facing north, and marching north, in reality he was being carried south by the current beneath him. And so, after struggling magnificently for twenty-six days, he returned.

Parry returned defeated, but not utterly. For he had outdistanced Scoresby's 81° 30′ N., and thus furnished a new record which was to remain unbeaten for fifty years. In his great march across the ice he had advanced 172 miles, and he calculated that in doing so he and his men had travelled 668 miles! He had well earned the knighthood which was bestowed upon him.

Thus ended Parry's endeavour—remarkable as the earliest attempt to reach the Pole on foot across ice, and memorable as making a new record in the struggle northward—82° 45′ N.

Von Wrangel, a Russian, made some remarkable journeys in the Siberian Sea at this time (1820–23). In latitude 138° W. the ice threatened his ship's safety, and the conditions were the worst that had ever been experienced in the North.

CHAPTER IX

FRANKLIN'S GREAT ATTEMPT

WHEN Parry in 1819 enthusiastically set off in the *Hecla* on the expedition by which he eventually reached Melville Island he took with him an equally eager young man, James Clark Ross, who was then only nineteen years of age.

Ross already knew something of the Arctic, having been with his uncle, John Ross, in an earlier expedition, thus beginning his distinguished career as an explorer in Arctic and Antarctic waters. In 1827 he sailed with Parry in the attempt to reach the North Pole over the ice by means of sledge-boats. Both Parry and Ross had the true spirit of the investigator—daunted by nothing and after every defeat rising to new efforts. This spirit, which may be exhibited in the laboratory at home no less finely than when suffering the extremes of hardship abroad, is the hall-mark of every true soul bent upon the discovery of truth.

James Ross had his first sea experience under his uncle. Both uncle and nephew were in the remarkable expedition of 1829 in the *Victory*, which was made possible by money provided by Sir Felix Booth. During this amazing enterprise they sailed to the Gulf of Boothia, explored the coast of a new land which was named Boothia Felix, and discovered, lying to the west, King William Land. James Ross, who had learned how to handle sledge-boats under Parry, took a lead in organizing sledge-parties. In 1831, on one of these expeditions, he succeeded in discovering the position of the North Magnetic Pole, which lies toward the west of King William Land. The needle of a compass points, not to the true geographical Pole, that is, to the pole round which the earth rotates; it inclines to the points which are the focus of the magnetic lines of force and which are termed Magnetic Poles, one of which was now reached for the first time.

ARCTIC HOOD
From a sketch by Dr E. K. Kane

While these investigations were going on the ship remained firmly stuck in the ice. Any further progress by sea was impossible. Ice, great masses of unyielding ice, blocked the way. In spite of her name, the *Victory* stuck fast, like a cork inside a bottle, entirely unable to force a passage out. The prospects of rescue grew steadily less, but with marvellous courage the crew kept up their hearts. One winter in the Arctic is enough to try the mental and physical endurance of any man. "An Arctic day and an Arctic night," says Dr Kane (himself a great explorer), "age a man more rapidly than a year anywhere else." And yet the Rosses and their men managed to survive four whole winters, although they suffered terribly from lack of food and clothing. In the end they were picked up by a whaling vessel and landed at Hull in 1833, four years after they had set off, expecting to be absent about twelve months. Their arrival made a great sensation, particularly among the sailors in the port, who knew the Arctic for a Tom Tiddler's ground from which many who ventured there never escaped. Ross and his nephew were welcomed as men who had risen from the dead. At the time when they landed on English soil an expedition under Sir George Back was searching for them in the Arctic—not the only occurrence of the sort in the history of Arctic exploration. Indeed, rescue parties have sometimes themselves required rescue.

During the early part of the nineteenth century, an era that was to become famous for Arctic exploration, the names of Parry and John and James Ross stand out brightly. These three, together with Sir John Barrow, that indefatigable supporter of adventure, formed a tower that stood four-square to the winds of criticism—winds sometimes quite as cold as any that ever blew in the Arctic. These men one and all devoted their lives, without regarding criticism or defeats, to the service of the North. Between Sir John Ross and Sir John Barrow was a long-standing quarrel that was never settled; but, enemies though they were, they were united in their whole-hearted love of exploration. Sir John Ross, who was passionate and obstinate (qualities that no doubt served him well among the ice), was seventy when he went on his last expedition in search of Franklin. The Government had refused to help him on account of his age, whereupon the old sailor flounced off, and, getting together a private expedition, sailed without official support.

Franklin, like Scoresby and several other great explorers, was born in an eastern county, Spilsby in Lincolnshire being his early home. Though not on the coast, Spilsby was, even in those days, not so far away as to be out of all touch with the sea, particularly in a county where the long lanes of dikes, which take the place of hedges, are a sufficient reminder of the Dutch who once came across the water and settled upon the East coast. The smell of the unseen sea must have stolen into Franklin's early dreams, and a holiday at the sea gave him such a passion for ships that he declared he would be a sailor. His parents had intended him to be a clergyman, but there was no resisting his enthusiasm, and to sea he was sent.

And so we find him at the age of nineteen at the battle of Trafalgar, in charge of the signals on the *Bellerophon.* Ten years passed, and, Napoleon being beaten on the field of Waterloo, a harassed Europe had time to devote to other things than war. It was then that Sir John Barrow came forward to champion the claims of the Arctic, with the result that Parry and Franklin both found themselves chosen for voyages of discovery. They did not go together; Lieutenant Parry went with Captain John Ross, Lieutenant Franklin with Captain Buchan. Each, we may be sure, carried with him immense enthusiasm, Franklin no doubt taking also the remembrance that his great hero, Nelson, at the age of fourteen had made a voyage to the Arctic, where he had unaided killed a Polar bear. As a matter of fact, Nelson ought never to have been taken on the voyage at all, for no 'boys' were being shipped, but he begged so loudly to go that at last he was signed on as a 'man,' on condition that he should do a man's work. That he carried this out literally the killing of the Polar bear proved.

Franklin, of course, was no boy in 1818. He was a man of thirty-two, but with a heart as eager for adventure as that of any boy. Both Nelson and Franklin afford splendid examples of men in whom the spirit of youth never died. Each had a strong sense of humour, and each was served by his men with a personal affection that is very rare. On every occasion when Franklin was organizing an expedition there was a rush of clamorous applicants, for the good fellowship on his enterprises was such that the vessel was nicknamed "Franklin's Paradise." And so, in whatever misery those who were with Franklin on his last, ill-fated journey finally perished, we may be certain that their love for their commander remained unwithered, and still lives on among those things that are eternal.

Franklin's first Arctic voyage, in 1818, was planned to proceed north from Spitsbergen, while his friend Parry had accompanied Ross to Baffin Bay. Parry got as far as Melville Sound, and then was stopped by the ice. Buchan and Franklin were not so fortunate as the sister expedition. For off Spitsbergen they were held up by the ice-pack, and their ships were so damaged that they had to return. Thus, instead of discovering the North Pole, as they had hoped, and then sailing home by way of Bering Strait, they had to hasten back from Spitsbergen not long after their start. Once more the ice had conquered.

In spite of the failure of this expedition, Franklin was eager to try again, and in 1819 he left on his second expedition. This time his instructions were to endeavour to reach the Arctic Ocean by way of one of the great northward-flowing American rivers. Owing to the war between the Hudson's Bay Company and the North-west Company, he was not able to obtain the help on which he had relied.

After a difficult journey he managed to reach his objective, and explored the coast to the north-west for some 550 miles. On the return journey the party endured incredible sufferings, many lives being lost through hardship and starvation before the survivors reached civilization once more. "Thus," said Franklin, "terminated our long, fatiguing, and disastrous journey in North America, having journeyed by water and land (including our navigation of the Polar Sea) 5550 miles."

This experience made Franklin well acquainted with the coast-line of North America, a fact which it is well to bear in mind, for it was always his great theory that a North-west Passage lay close in by the north coast of America. "If I can but get down by Simpson Strait," he would say, "my work is done. Thence it's plain sailing westward." Later discoveries proved him to be right, thus showing he had a mind as sagacious as it was intrepid.

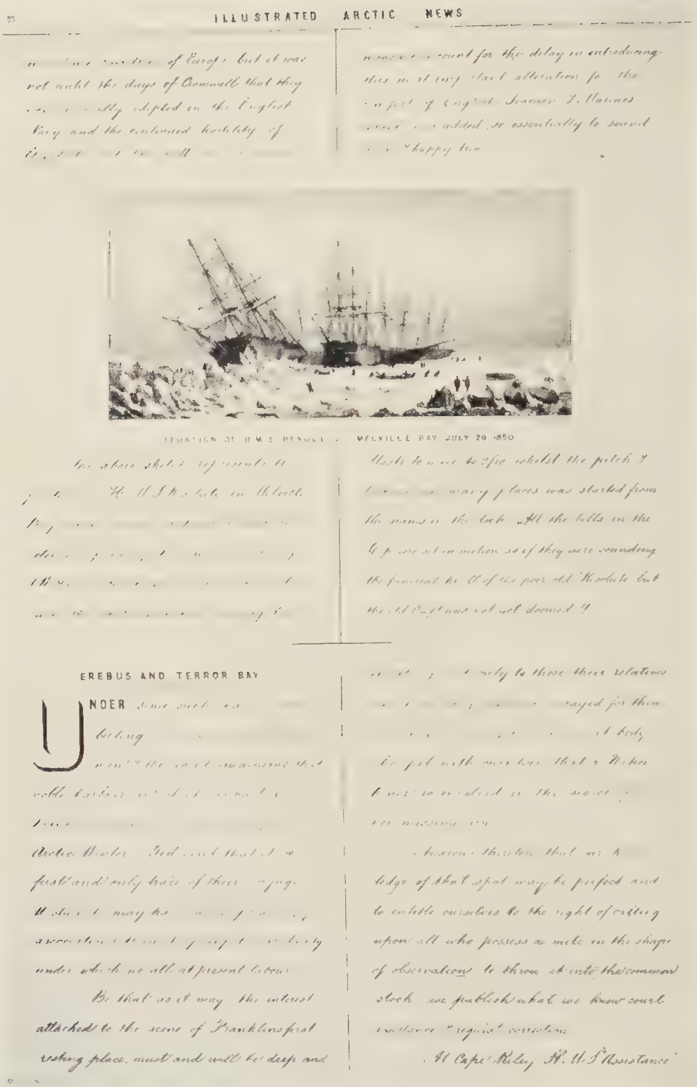
A further voyage, investigating the Mackenzie River, brought Franklin more fame, and greatly added to the general knowledge of the North; after this he spent some quiet years as Lieutenant-Governor of Van Diemen's Land, where he became as greatly endeared to the colonists as he had been to those who had voyaged with him in the Arctic.

His seven years of office in Australia being ended, Franklin returned to England in 1844. He happened to arrive at a moment when there was a new wave of enthusiasm for Polar discovery. Two famous ships, the *Erebus* and the *Terror*, which had begun life as bomb vessels and later had been adapted for ice, had just arrived home from the South Polar region, where they had won renown under Sir James Ross, who had added to his laurels. Ross having declined an offer to try his luck again in the Arctic, Sir John Franklin was not slow in snatching the opportunity. Baked by the sun of Australia, he yearned once more for the dangers of the ice-pack and for the alluring hardships of the Arctic night, its darkness illumined by the glories of the aurora borealis. Determined not to be turned away lightly, he marched to the Admiralty and asked for the command of the expedition. They objected that he was sixty. "No, no, my Lords," he protested. "Not sixty, but fifty-nine." And so well did he plead his cause that the *Erebus* and the *Terror*, manned with 134 officers and men, were put under his command.

Thus, in 1845, these two vessels, bearing many a scar from the ice of the Antarctic, put to sea once more, to face the ice of the Arctic. They went merrily and full of hope. On board was a leader loved by his men, and with immense experience of the Polar Seas. They had food for three years; they were equipped with everything imagination could suggest, or money could buy; auxiliary screws had been fitted to the ships so that they could summon the help of steam against ice. Surely the ice would now be

A QUAINT PICTURE ILLUSTRATING THE PLANTING OF THE BRITISH FLAG ON THE TRUE POSITION OF THE MAGNETIC POLE

From "The Last Voyage of Sir James Ross"



ILLUSTRATED ARCTIC NEWS

[illegible] of Europe but it was not until the days of Cromwell that they [illegible] in the English Navy and the continued hostility of [illegible]

[illegible] for the delay in introducing this [illegible] attention to the [illegible] of English Seamen [illegible] added so essentially to sound [illegible] happy [illegible]

MELVILLE BAY JULY 29 1850

The above sketch represents [illegible] H.M.S. Resolute in Melville [illegible]

[illegible] to their whilst the pitch [illegible] many places was started from the seams [illegible] All the bells on the [illegible] set in motion as if they were sounding the funeral knell of the poor old Resolute but the old craft was not yet doomed!!

EREBUS AND TERROR BAY

UNDER [illegible]

Arctic [illegible] first and only trace of their [illegible] under which we all at present labour.

Be that as it may the interest attached to the scene of Franklin's first resting place, must and will be deep and [illegible] only to those three relatives [illegible] prayed for them [illegible]

[illegible] therefore that our knowledge of that spot may be perfect and to entitle ourselves to the right of calling upon all who possess a mite in the shape of observations to throw it into the common stock we publish what we know [illegible]

At Cape Riley H.M.S. "Assistance"

FACSIMILE OF A PAGE FROM A JOURNAL PUBLISHED IN THE ARCTIC

This was produced by members of the expedition which sailed in H.M.S. *Resolute* in search of Sir John Franklin, 1852.

beaten! With steam at her back a ship must force her way anywhere! No Arctic expedition up till now had used steam; steam could do anything. A fig for ice! Its day was over. And so those two gay little ships in May 1845 sailed on a voyage from which they were never to return.

CHAPTER X

NEW ENTHUSIASM FOR THE ARCTIC

WHEN Franklin set off in command of the *Erebus* and the *Terror* he had in his mind a very definite plan. The secret of a passage leading from the Atlantic to the Pacific by way of the Arctic was still undiscovered, but there were many inklings as to its precise whereabouts. Though navigators could not yet say with certainty "That is the way," they felt they had so nearly found it that it was almost within their grasp. It was very much like one of those games in which we try to find hidden objects. The searcher gets 'warmer and warmer,' till at last he lights by chance upon the object of his search.

So with Franklin. He was looking for a waterway that he knew was tantalizingly near, though so cunningly hidden by ice. Just as we ourselves sometimes try to fit together the pieces of a jigsaw puzzle, so Franklin's game was to fit together the pieces of a map; but while we have only cardboard to deal with, he was playing with actual sea and land. It will be remembered that he had, in his earlier career, thoroughly investigated the extreme northern coast of America, and that he was certain that if he wanted to emerge from the Arctic by way of Bering Strait he would be able to do so by keeping close to the coast of America, going west from King William Land. He was well acquainted with Barrow Strait, that waterway about 60 miles wide and 200 miles long which lies to the west of Lancaster Sound. So that he held, as it were, in his hand two great pieces of the puzzle. The question was how to join them together. What exactly lay between these two? If a ship could make her way down from Barrow Strait to King William Land the passage was found; the bits of the puzzle would go together, and on the map it would be possible to draw a line from the Atlantic to the Pacific showing how a ship might enter the Arctic regions by the east, and pressing ever westward finally emerge through Bering Strait.

This route Franklin set out to discover, and by passing down the strait since known as Peel Sound, he actually did discover it. It was many years before the tragedy of his expedition was fully cleared up, and his great discovery known. But that the chief glory for this achievement belongs to him is now universally acknowledged, and in Waterloo Place in London, at the foot of the monument erected to him, are these words:

FRANKLIN
TO THE GREAT ARCTIC NAVIGATOR
AND HIS BRAVE COMPANIONS
WHO SACRIFICED THEIR LIVES IN COMPLETING
THE DISCOVERY OF THE NORTH-WEST PASSAGE
A.D. 1847–8.
ERECTED BY THE UNANIMOUS VOTE OF PARLIAMENT

On that bright day in May 1845 when Franklin and his men sailed from England the tragedy in front was hidden from them; they went joyously, fearing no evil. Two months later they were in Baffin Bay, where they exchanged greetings with the crew of a whaler which was moored to the ice-foot (*i.e.*, the ice-girdle formed by sea and wind in winter around all Polar lands). Everything was then going well, and the message left with the whaler was full of hope. At this point it is, perhaps, well to remember that July, which to many means blue sky, long, hot days, and bathing, in the Arctic means nothing of the sort. Though the seas are then more open, they are nevertheless studded with icebergs which have been freed by the warmer temperature of the water, and have come floating down from the Polar regions, threatening with destruction any ships in their path. As a protection against the pressure of ice, ships often make themselves firm by anchoring to or cutting a dock into the ice-foot; the practice was known in the earliest days, as when Frobisher in 1576 found it necessary "to bind fast unto the ice."

In due time the whaler brought Franklin's cheerful message to England, after which there was utter silence. At first this silence was looked upon as merely natural. The ships were victualled for three years; there was no need for alarm. And in those days, long before wireless and even ten years before the first Atlantic cable was laid, no one expected news quickly from the distant North.

So those at home who loved Franklin waited quietly and without uneasiness till two years had slipped away, and still no message from him had been received. Then, as public anxiety had now become insistent, an expedition was sent out under Sir John Richardson and Dr Rae, carrying food to such stations on the north coast of America as might now have been reached by the ship's company. Imagination pictured the men on some lonely outpost, starving and too exhausted to go farther.

But when Richardson and Rae got back they reported that they could find no trace of the men or their ships. Every one now became really alarmed. People who had never before given a thought to the Arctic pictured to themselves the tragedy of the heroic company dying slowly in an ice-bound land, and there were urgent demands for a rescue expedition. Thus began the tremendous search for Franklin. Think of it, skilful and anxious explorers raking those lonely places in the North for years before they found what they sought! Does this not give you a picture of the immense difficulties lying in the way of those who venture into the Arctic? In spite of their enthusiasm, and despite their resources, it took the searchers twelve years to learn the truth.

Once the hunt was up every nation joined in. The United States, which hitherto, in spite of (or perhaps because of) her geographical position, had remained strangely uninterested in Polar discovery, now made up for her earlier indifference by an enthusiasm that has never since subsided. Nearly forty expeditions were organized, until at last M'Clintock's discoveries in 1859 brought to light definite proof of Franklin's death.

SIR JOHN FRANKLIN

During those twelve years, when some of the ablest and most courageous men of all nationalities attacked the Arctic for its secret, more than 7000 miles of coast were investigated, the existence of a North-west Passage was proved, and our knowledge of the geography and conditions of the Arctic was greatly increased.

The North Pole was still a mystery, but now that the great problem of the North-west Passage had been solved it was reasonable to hope that a way to the North Pole would be the next great discovery. Three hundred years had passed since the earliest sailors had dreamed of that passage to 'Cathay,' and now it had been accomplished! And perhaps it may be that here, round the spot where Franklin's bones are buried, the spirits of Frobisher and Davis, of Hudson, of Scoresby, and many another unrecorded Arctic hero now keep ghostly sentry-go.

> Not here! the white North has thy bones; and thou,
> Heroic sailor-soul,
> Art passing on thine happier voyage now
> Toward no earthly pole.[1]

---

[1] Alfred Tennyson.

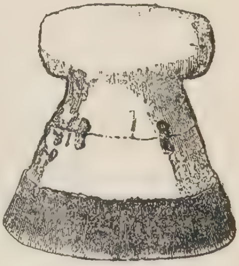
CHAPTER XI

M'CLURE'S NORTH-WEST PASSAGE

OF the thirty-nine relief expeditions sent out in the hope of rescuing Franklin and his men one of the most important, in the results achieved, was led by Captain (afterward Sir) Robert M'Clure. Captain M'Clure, who set off in 1850, was among the earliest to go, and though at the end of four strenuous years he returned without news of Franklin, he had the honour of leading the first party to complete the North-west Passage. Though he had failed in his main objective, he had succeeded in doing what no one had done before—he had passed by way of the Arctic from the Pacific to the Atlantic, thus making a North-west Passage, and *had returned home safely*. Sir John Franklin was in a fair way to achieve his ambition, but unhappily he did not live to finish his voyage. His map was complete, the two known sections of the expected route were now joined by Peel Sound, which runs between Prince of Wales Land and North Somerset, and to Franklin's men must be given the credit of discovering that mysterious waterway hunted for by seamen since the days of Frobisher. Like Moses, Franklin viewed the Promised Land from afar, and died with the satisfaction of knowing that the riddle was solved.

If, however, Franklin thus rightly wears the laurel a wreath is also due to M'Clure, who in his search for Franklin discovered, not indeed the route which Franklin had navigated, but another route lying to the west of Peel Sound. And thus if we distinguish Franklin's achievement as the finding of *the* North-west Passage M'Clure deserves to be remembered as the discoverer of *a* North-west Passage, and also as the first seaman to complete the passage in one continuous voyage, partly by ship and partly over ice, from the Pacific to the Atlantic.

Before disappearing into the unknown Arctic in 1850 M'Clure, in case of disaster, left exact particulars as to his probable movements, concluding with the words, "I consider that we have said good-bye to the world for the next two years."


ESKIMO WOMAN'S KNIFE

The two ships of the expedition were the *Investigator*, commanded by himself, and the *Enterprise*, whose captain, Collinson, was in command of the expedition. These two ships were only just back from the Arctic, where, under Sir James Ross, they had been searching for Franklin. Now they were off again on the same errand, but this time they were ordered to go by way of Bering Strait, in the hope that Franklin's ships, the famous *Erebus* and *Terror*, might have succeeded in pushing their way westward.

WALRUS SKULL AND TUSKS

Early in the adventure tremendously heavy gales separated the *Investigator* and the *Enterprise*, and they did not meet again. By August M'Clure had entered Bering Strait, where he met the first ice and great herds of walruses. These sea-creatures, which frequent the shallower waters, have each two tusks, which they use in uprooting their food. They live on shellfish and marine plants which they dig up by means of these strong tusks. The walrus is zealously hunted by Eskimos and whalers. Its flesh is considered a delicacy, it has a thick outer coating of blubber, and its ivory tusks are of considerable value. It is interesting to reflect how great a change Polar exploration has occasioned in the lives of the creatures of the Arctic wild. Once only subject to the attacks of native hunters with primitive weapons, they are now harried by enemies armed with all the resources of science. Their old security has gone; no longer are they "monarchs of all they survey," and every year makes them more wary of man.

ESKIMOS WATCHING AT A WALRUS HOLE

From Kane's "Arctic Explorations"

Keeping well in along the north coast of America, M'Clure pressed east till he reached Cape Bathurst. Here he found friendly Eskimos, and here for a short time he paused, for Cape Bathurst was his first turning-point. From this known, comparatively comfortable spot it was his intention to push north into the unknown. From the Eskimos the explorers tried to gather some idea as to what lay north of Cape Bathurst, but they got no help here. Looking toward the great frozen sea, the Eskimo could only repeat, "It is the land of the Great White Bear," and they showed terror at the idea of anyone attempting to go thither. But M'Clure was not to be put off by the forebodings of a few Eskimos, and setting sail he headed north in the direction of Banks Land.

Having discovered the southern portion of Banks Land, which he named "Baring Land," M'Clure in his second season endeavoured to work his way up the west coast of this island. As the *Investigator* cautiously made her way up this narrow lane between coast and pack-ice a great idea grew in M'Clure's mind. Like Franklin, he held two pieces of a puzzle, which, if they could be fitted together, would solve a problem. For M'Clure knew that to the north of Prince Albert Land was Melville Sound—that sort of store-cupboard of the north, holding within it masses of ice as a larder holds pots of jam—through which the intrepid Parry had tried in vain to pass. There it lay, mysterious and forbidding, but at the same time a *known* expanse of water through which a passage might be found. Toward this water the *Investigator* was now travelling, along a route which no one had so far sailed. If this channel should continue till it reached Melville Sound then it would join together the two pieces over which M'Clure had been puzzling, and by connecting the Sound with the water south of Banks Land would provide a continuous waterway to the Atlantic; it would, in short, be a North-west Passage. This dazzling hope kept warm M'Clure's heart as the *Investigator* nosed her way through the channel in a north-easterly direction. With every knot she made M'Clure's hope grew stronger; and yet he did not dare to do more than hope. Any moment their passage might be blocked by land, and they might, to their dismay, discover that what they had taken for an open channel was only a long inlet running up into land. But the *Investigator* went on . . . on. "I cannot," wrote M'Clure in his diary, "describe my anxious feelings. Can it be possible that this water shall prove to be the long-sought North-west Passage? Can it be that so humble a creature as I am will be permitted to perform what has baffled the talented and the wise for hundreds of years?"

Each day, though it brought them nearer to Melville

Sound, also brought the adventurers nearer to the ice, and by the middle of September they were confronted by the down-rush of such a fearsome pack that M'Clure decided to secure his ship to an ice-floe, some ten miles south of Princess Royal Island, and wait there till the winter was over, when the perils from ice would be less. Here, anchored to their great ice-floe, they remained under its shelter in security, while the swiftly moving blocks of ice swept southward past them. Thus ice was at once their danger and their safety.

Here M'Clure and his men lived for many weeks, without seeing any human being except their comrades. Their plan was to use the ship as a depot from which to make sledge journeys across Banks Land. On these excursions, in which the heavy sledges were all drawn by men, little was taken in the way of provisions except pemmican, cocoa, water, and oatmeal, and, by way of bedding, a sleeping-bag. But the courage of the men was equal to anything, and their bravery was rewarded when, after five days of immense toil, they succeeded in reaching the north coast of Banks Land, and saw stretching to the north the frozen waters of Melville Sound, magnificent with its blocks of clear, cold hummocky-ice.

That night when, from Cape Lord John Russell, M'Clure and his handful of men viewed their discovery the cold was so intense that their "fur robes were frozen into a solid mass, and the blanket bags were so stiff . . . as to cause them to stand erect: and the clothes, caps, whiskers, and beards of the party were constantly frozen together." But in spite of every hardship their hearts were light because of their great discovery. In looking for Franklin they had found a North-west Passage. Surely this was an omen from which they might hope that, before long, they would also come upon the *Erebus* and *Terror*?

The summer of 1852 came, without letting M'Clure and his men escape, and even the bravest began to feel gloomy as summer passed into winter, and there seemed no hope of getting away from the unrelenting ice. But help was at hand. A rescue party under M'Clintock was searching for them, and in April 1853 the crew of the *Investigator* were overjoyed by the sudden appearance of Lieutenant Pim from the *Resolute*. "The news," says M'Clure, "flew with lightning rapidity, the ship was all commotion: the sick forgetful of their maladies leapt from their hammocks: the artificers dropped their tools, and the lower deck was cleared of men; for they all rushed for the hatchway to be assured that a stranger was actually among them, and that his tale was true. Despondency fled the ship, and Lieutenant Pim received a welcome—pure, hearty, and grateful—that he will assuredly remember and cherish to the end of his days."

ESKIMO SEALSKIN CUP

Of just such a rescue must Franklin's men have dreamed—alas! in their case never to be realized! Even yet the trials of M'Clure were not over. Acting under orders, he reluctantly abandoned the *Investigator*, and finally, after a long journey over difficult ice, he and his men reached England, by way of the Atlantic, on board the *North Star*, the *Phœnix*, and the *Talbot*, in September 1854.

They had come back without their ship, and without news of Franklin, but with proof of having investigated a passage from the Pacific to the Atlantic. For this splendid work the Government awarded a sum of £10,000 to the officers and men of the *Investigator*, whose safe return, though without the hoped-for news of Franklin, caused great joy. Through their labours our knowledge of the geography of the Arctic had been marvellously extended, and no one would have rejoiced more than Franklin himself.

CHAPTER XII

NEWS OF FRANKLIN

ALTHOUGH M'Clure remained in the Arctic for four winters, he did not find any trace of Franklin. Nor did the many other search-parties who were raking the frozen North in every likely quarter, until quite unexpectedly Dr Rae announced in 1854 that he had come across Eskimos who had in their possession articles which clearly had once belonged to the ill-fated explorer.

This news came as a thrilling surprise. For one thing Dr Rae's investigations had been in a quarter where it was not thought likely he would meet with success. But it is a curious fact that often enough we find again in some quite unexpected corner an article we think we have mislaid elsewhere. So it was with Dr Rae, who, on being sent by the Hudson's Bay Company to study the geography of Boothia, boldly announced that he was going "where Franklin was not likely to be met with." In this view he was supported by most of those acquainted with the Arctic, who maintained that Franklin would be found farther west. Thus the surprise was all the greater when Dr Rae in 1854 sent word that he had met Eskimos who talked vaguely of a party of white men who had starved to death somewhere west, not far from a great river.

After a great deal of trouble Dr Rae succeeded in getting information from which it was evident that a party of about thirty Englishmen had perished not far from Back's, or the Great Fish, River. All this was hearsay among the Eskimos, but of a kind that bore the stamp of truth.

More convincing still were the spoons and forks, some marked with Franklin's name, which Dr Rae discovered in the possession of Eskimos and purchased from them.

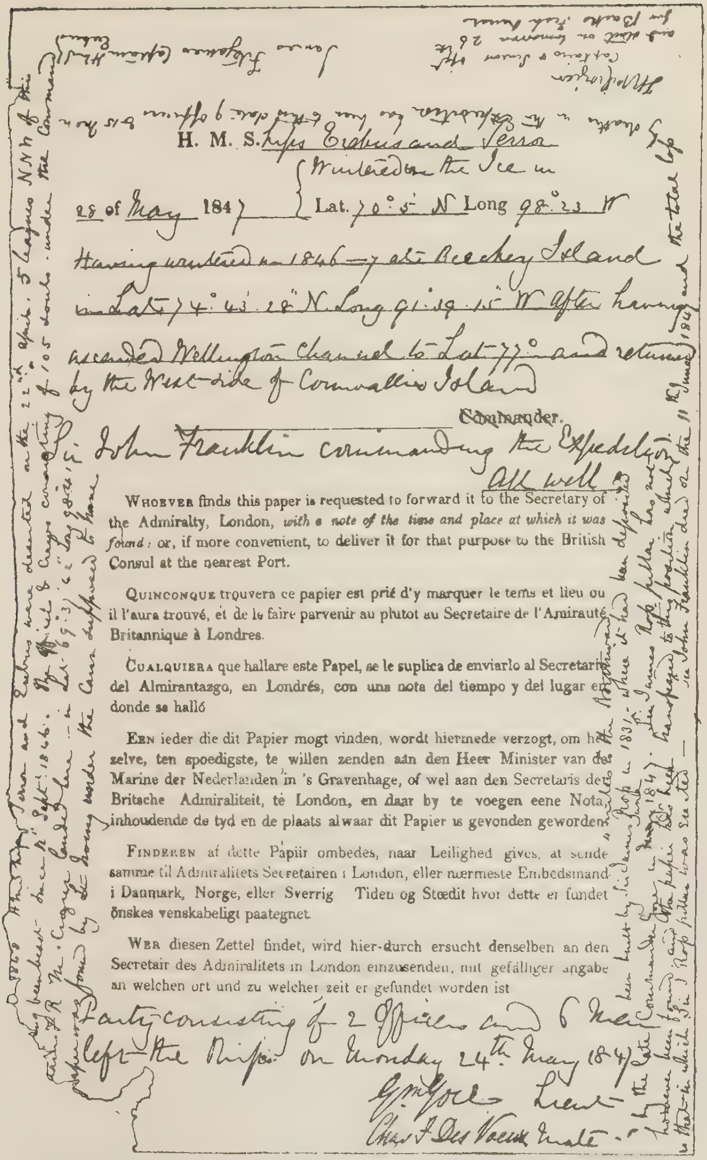
When the news of this vital discovery reached England Lady Franklin, who had worn herself out in promoting the search for her husband, urged that yet another party should be sent out. But England was by this time at war with Russia, and the Treasury could ill afford further subsidies to the Arctic when from the Crimea came daily demands for more and more supplies. When the war was over the hope of survivors being found was so small that the Government still would not sanction further national efforts; but in 1857 Lady Franklin, aided by a

DESTRUCTION OF CACHE BY BEARS
From Kane's "Arctic Explorations"

considerable number of generous friends and subscribers, fitted out the *Fox*, and, under the command of Captain M'Clintock, this yacht of 177 tons was hastily transformed into an Arctic vessel, being strongly sheathed with iron to cut through and withstand the ice—preparations that were of immense importance, for, as it turned out, the *Fox* was destined to be tested very thoroughly. As an explorer M'Clintock is especially remembered for his wonderful achievements in sledge-travelling. In the opinion of many he will remain the greatest sledge-traveller of all time. He invented the system of depots and sledge routine as followed at the present time, thus proving himself an original thinker and a man of remarkable foresight.

Setting out from England in July 1857, M'Clintock was very early in the season caught by ice when he was off the north-west coast of Greenland, and for eight months he and his crew were held by a barrier through which there was no escape. Helplessly frozen in, the ship drifted with the ice, which bore her along till she came into open water, more than a thousand miles south of the place where she was beset. But for her iron plates, the *Fox* could not for a moment have withstood the pressure of ice, so that M'Clintock writes in his diary: "After yesterday's experience I can understand how men's hair has turned grey in a few hours."

Once free, M'Clintock's only thought was how to make up for lost time. The best part of a year gone, and nothing done! Without delay he fought his way again across Baffin Bay, this time with better fortune, arriving finally, in 1859, at King William Land. Here an extensive search by all members of the party in different directions was made, as a result of which the searchers found, at different points, many sad proofs of the death of Franklin and his men. Most interesting of all was an



H. M. Ships Erebus and Terror
Wintered in the Ice in
28 of May 1847 Lat. 70°5' N Long 98°23' W

Having wintered in 1846–7 at Beechey Island in Lat 74°43'28" N Long 91°39'15" W After having ascended Wellington Channel to Lat 77° and returned by the West side of Cornwallis Island

Commander.

Sir John Franklin commanding the Expedition

All well

WHOEVER finds this paper is requested to forward it to the Secretary of the Admiralty, London, *with a note of the time and place at which it was found*: or, if more convenient, to deliver it for that purpose to the British Consul at the nearest Port.

QUINCONQUE trouvera ce papier est prié d'y marquer le tems et lieu ou il l'aura trouvé, et de le faire parvenir au plutot au Secretaire de l'Amirauté Britannique à Londres.

CUALQUIERA que hallare este Papel, se le suplica de enviarlo al Secretario del Almirantazgo, en Londrés, con una nota del tiempo y del lugar en donde se halló

EEN ieder die dit Papier mogt vinden, wordt hiermede verzogt, om het zelve, ten spoedigste, te willen zenden aan den Heer Minister van der Marine der Nederlanden in 's Gravenhage, of wel aan den Secretaris der Britsche Admiraliteit, te London, en daar by te voegen eene Nota, inhoudende de tyd en de plaats alwaar dit Papier is gevonden geworden.

FINDEREN af dette Papiir ombedes, naar Leilighed gives, at sende samme til Admiralitets Secretairen i London, eller nærmeste Embedsmand i Danmark, Norge, eller Sverrig Tiden og Stœdit hvor dette er fundet önskes venskabeligt paategnet.

WER diesen Zettel findet, wird hier-durch ersucht denselben an den Secretair des Admiralitets in London einzusenden, mit gefälliger angabe an welchen ort und zu welcher zeit er gefundet worden ist

Party consisting of 2 Officers and 6 Men left the Ships on Monday 24th May 1847

Gm. Gore Lieut.

Chas. F. Des Voeux mate

25th April 1848 HM Ships Terror and Erebus were deserted on the 22nd April, 5 leagues NNW of this having been beset since 12th Septr 1846. The Officers & Crews consisting of 105 souls under the Command of Captain F. R. M. Crozier landed here in Lat. 69°37'42" Long 98°41' This paper was found by Lt. Irving under the cairn supposed to have been built by Sir James Ross in 1831 4 miles to the Northward where it had been deposited by the late Commander Gore in June 1847. Sir James Ross' pillar has not however been found and the paper has been transferred to this position which is that in which Sir J. Ross' pillar was erected — Sir John Franklin died on the 11th June 1847 and the total loss by deaths in the Expedition has been to this date 9 officers & 15 men.

James Fitzjames Captain HMS Erebus

F. R. M. Crozier Captain & Senior Offr

and start on tomorrow 26th for Backs Fish River

FACSIMILE OF THE ADMIRALTY FORM FOUND AT POINT VICTORY

Admiralty form found at Point Victory, on which had been written in 1847 a hopeful message, stating that Franklin's party had wintered successfully at Beechey Island. There had been one or two deaths, but in the expedition all was well. But to this bright message a significant postscript had been added about a year later, stating "Sir John Franklin died on the 11th June 1847 and the total loss by deaths in the Expedition has been to this date 9 officers and 15 men."

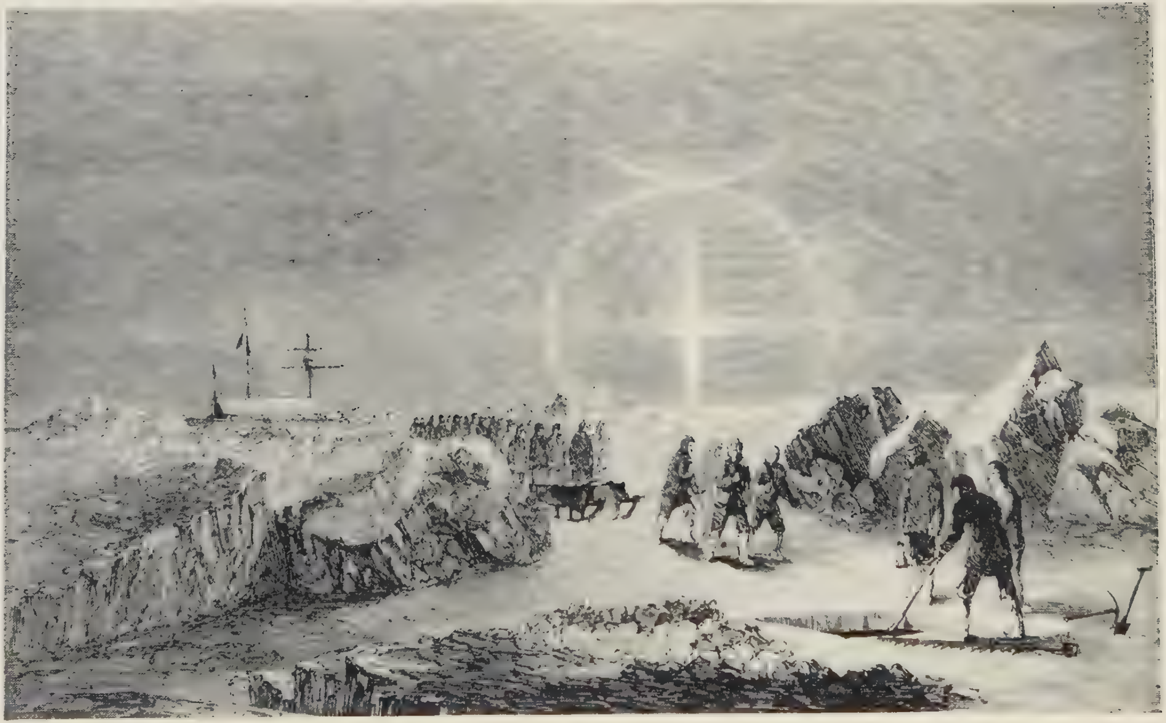
This simple statement was signed by Captain Crozier, second in command to Franklin, and by Commander Fitzjames, of the *Erebus*. In a corner were also the words "and start on to-morrow 26th [April 1848] for Backs Fish River." No other message was found, but a group of human skeletons later discovered not far from the Great Fish River confirmed the rumours of the Eskimos, and made it only too plain what the end of the expedition had been.

And yet much mystery still remains. The discovery recently of *unopened* tins of meat, which when submitted to tests were proved to be wholesome, makes more extraordinary the fact that there were also, near the same spot, tins which had been opened, and then thrown away with their contents uneaten. On Beechey Island, also, were serried ranks of empty tins ballasted with gravel, suggesting the result of an enquiry and the condemnation of considerable quantities of meat. How far defective stores contributed to the disaster we shall never know.

Another interesting food relic of the Franklin period may now be seen in the British Museum. Inside a glass case is a saucer filled with what appears to be a handful of greyish pebbles. These, however, are no pebbles, but a specimen of flour which formed part of the stores buried in 1827 by Captain Beechey on Chamisso Island for the use of Franklin's men. Here it lay untouched until 1849, when it was dug up by Captain Moore of the *Plover*.

M'CLINTOCK'S SEARCH-PARTY FINDING ONE OF FRANKLIN'S CAIRNS AT CAPE HERSCHEL

From " A Narrative of the Discovery of the Fate of Sir John Franklin and his Companions "



BURIAL OF A MEMBER OF THE M'CLINTOCK EXPEDITION

Paraseleræ (mock moons) seen in background. This phenomenon is familiar to travellers in the Arctic.

From "A Narrative of the Fate of Sir John Franklin and his Companions"

News of Franklin

Another search expedition had important geographical results. Dr E. K. Kane, as we have seen, commanded an American ship which sailed (1852–55) up the west coast of Greenland. Kane's surgeon, I. I. Hayes, fitted out, with financial help, a new expedition immediately they returned, and, in spite of certain mistakes, added to the Arctic map.

Franklin's great adventure ended in tragedy, but the expedition was a glorious failure. For investigation proved beyond a doubt that Franklin had sailed through Peel Sound, down to the west coast of Boothia. Had they continued on this course they must have been the first to sail through that North-west Passage of which so many had dreamed. Unfortunately, they understood from their charts that Boothia and King William Land were joined by an isthmus, and therefore retreated and made their way down the west coast of King William Land, where they were held up and the ships met their fate in a pack-infested strait. It was left for the sledge-parties in the following season to make the longed-for discovery, which then came too late to save the expedition, though not too late to ensure its immortal fame. Lives had been lost, but not for nothing. Gallant seamen had perished, but not before they had accomplished a great task. To taste the pure joy of discovery men willingly sacrifice even life itself. And why not? For death, after all, is also an adventure. The greatest, indeed, of all!

Samuel Purchas, that untiring collector of sea-lore, in 1553 wrote well and truly:

> Great jewels are those merchants and mariners which, to the glory of our nation, neither spare cost, and fear no danger in their attempts—resolute, gallant, glorious attempts! . . . Great God! let me in silence admire and worship Thy wisdom, that in this little heart of man hast placed such greatness of spirit as the world is too little to fill.

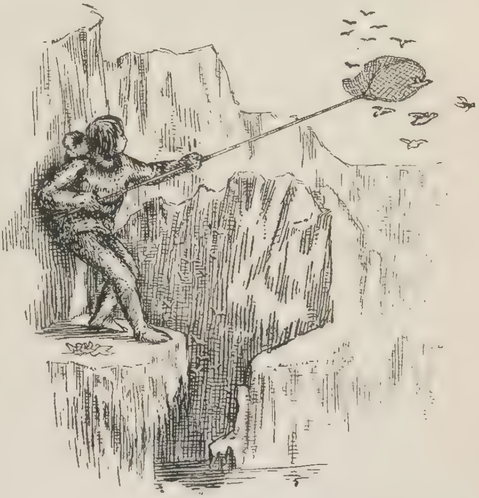
CHAPTER XIII

ANOTHER STEP NEARER THE POLE

THE enthusiasm for Arctic exploration, which had burned so warmly in England during the long search for Sir John Franklin, lost a little of its heat after the return of the *Fox*. Franklin and his men had perished—that was now certain, and there were not wanting people who complained loudly against the folly of risking more human lives in latitudes so hostile. Sir John Barrow too, that great Arctic enthusiast, was dead, and without his vigorous breath behind it the flame grew a little dim. Other interests seized public attention, and upon the outbreak of Civil War in America in 1861 (a war that deeply affected the daily lives of thousands of men working in the cotton factories in Lancashire) England became absorbed in watching that struggle. And yet, even in the United States itself, at a time when the whole country was in jeopardy, there were men whose chief thought was of the Arctic. Among these was Captain Charles Hall, once a blacksmith and later a journalist, who was so moved by Franklin's tragedy that he organized an expedition to search for any of the party who, happily, might still survive. He not only lived for several years actually with Eskimos to the north of Hudson Bay, but made a brave effort in the *Polaris* in 1871 to reach the Pole.

Once more the ice triumphed, and, after reaching latitude 82° 16′ N., Hall had to return. After terrible adventures men had indeed found a North-west Passage, but to reach the Pole still seemed a forlorn hope. Above latitude 82° 45′ N. no man had yet set foot. This northerly record, made by Parry in 1827, was still unsurpassed.

In other countries also were men who had warmed to the Arctic through the tragedy of Franklin. Particularly was this so in Norway and Sweden. From these countries, from 1858 onward, there was a steady flow of expeditions, mainly for the purpose of investigating Spitsbergen and Greenland. All these voyages were of value, but of prime importance was Nordenskiöld's in 1870, when Professor Nordenskiöld and Dr Berggren made a great attempt to cross Greenland, the interior of which is a vast ice-plateau, the most forbidding of all types of land.



CATCHING AUKS
From Kane's "Arctic Explorations"

In the previous year an expedition fathered by Germany was returning from an important investigation of Greenland's east coast, which is guarded by a northern current so ice-ridden that the bravest may well shrink from it. Having sailed as far north as latitude 75° 30′ N. and having discovered and named Cape Bismarck, this expedition, after wintering off Greenland, reached home safely in 1870. On board was a young man named Payer, who, so far from being terrified by his winter among the ice, was aflame to go still farther north. So hotly did his heart burn within him that scarcely was he home before he set off again, with a friend, to examine the ice round Spitsbergen and Novaya Zemlya.

PUBLIC
DEPTFORD

The two came back glowing with hope, and so filled others with enthusiasm that an Austro-Hungarian expedition was organized, and, in command of Payer, set off in 1872 to the ice-land of his dreams. As if conscious that here was a hot-blooded young man coming to conquer, the weather that year was especially severe, and by August Payer's ship, the *Tegetthoff*, was firmly beset off Novaya Zemlya. For more than a year she remained a prisoner, but not a stationary prisoner. For there were winds in plenty, before which the ice-floes steadily drifted. These happily blew mainly from the south, and Payer and his men presently found themselves in latitude 79° 54′ N., and within sight of land.

POLAR BEAR WITH SEAL

This land, previously undiscovered and now known as Franz Josef Land, proved to be a huge group of ice-laden islands, without a general ice-cap, but displaying separate sheets of highland ice and glaciers. Since then it has been a jumping-off ground for many an attempt to reach the Pole, and here Nansen wintered after leaving the *Fram* in 1895 on his memorable journey "farthest north."

THE " TEGETTHOFF " DURING ICE-PRESSURE

The scene is illuminated by the aurora borealis

From "New Lands within the Arctic Circle," by Julius Payer (*Macmillan*)

A PARTY FROM THE "TEGETTHOFF" ENCOUNTERS A BEAR

From "New Lands within the Arctic Circle," by Julius Payer (Macmillan)

Bears and foxes roam its frozen shores, and by killing these animals and using them for food Payer and his men kept in good health. Nansen, in his sojourn there, reports not having seen bears between October and January, but this may partly have been the result of the darkness. "Night and day," Nansen wrote, "are now equally dark"—a condition during which even the most keen-eyed hunter might easily overlook his prey, especially a prey camouflaged by wearing a skin almost the colour of his surroundings. Far more likely than the old idea that Arctic creatures migrate in the winter is the newer theory that through darkness they often escape observation.

Stefansson, too, in *The Northward Course of Empire*, declares positively that most of the old ideas as to animal life in the Arctic are erroneous. "The idea that the Polar regions are devoid of animal life," he asserts, "has been the most stubborn of the misconceptions."

Equally does he oppose the theory that birds and animals found in the North in the summer of necessity move farther south in the winter. He writes:

> It was the theory of the landsmen that whatever birds or animals might be in the North in summer would certainly move south in the winter. . . . It is astounding how firm a hold these theories had on the early explorers. . . . In summer the owls prosper everywhere in the Polar regions because at that time the mice can be seen running around on top of the ground. In winter the mice are still in the northern lands just where they were in summer but they are in their frozen holes or going around, mole-fashion and invisible to the owls, under the snow.

Take a look at that strange, white, silent land. In one tiny corner of a great snow-covered stretch is a hut, a pathetic sign of the presence of man for ever yearning to solve the riddle of life. It is night; darkness hangs over the little hut, and inside men, in sleeping-bags, press against each other for warmth and still shiver with cold. A lamp burns, but there are icicles on the walls, and the breath of the sleepers rises like steam and then freezes. But though their bodies are frozen, there is warmth in their hearts. Hope burns there, and, thus sustained, they can rise and look cheerfully upon a new day that is as dark as the night that is just over, and as cold. "When the Polar night set in," says the Duke of the Abruzzi in his book *On the Polar Star in the Arctic Sea*, "it was lit up by the moon, and thenceforth our satellite gave us light enough, for a fortnight every month, to work and to walk about in. When there was no moon, we were in utter darkness. . . . The darkness was to last for about two months."

Undaunted by the awful severity of the cold, or by the many perils that surrounded them, Payer and his companions made an extensive survey by sledges of this newly discovered land, and happily reached home in safety in 1874, bringing with them proof of their extremely important discovery.

News of these various achievements in due time found its way to England, and again our country turned its thoughts toward the Pole. It was urged that a new and elaborate expedition should be organized, and so admirably was the case pleaded that Disraeli, then Prime Minister, was won over, and Parliament in 1875 voted a sum of £36,000 to be devoted to Arctic exploration. Here was a chance for those who were on fire, like Beowulf, to "forth-fare," and from all quarters came applications from men clamouring for places in a new expedition that would land them, not *in* the sun, but *out* of it.

The new expedition, which was splendidly equipped and organized with the minutest care, sailed in two tough ships, the *Alert* and the *Discovery*, under Captain (later Sir George) Nares. With Captain Nares was Captain (later

Sir Albert) Markham. They were instructed to make their way to Baffin Bay, and from there to Smith Sound, a favourable point, it was judged, from which to make an attempt to reach the Pole.

This route was chosen on the ground that the presence of Eskimos along the shores of Smith Sound afforded some sort of security. Where the Eskimos lived game was likely to be found, and the expedition would be cheered by the feeling that in an emergency they might reasonably expect to work their way back to some point on the Sound where Eskimo help would be forthcoming.

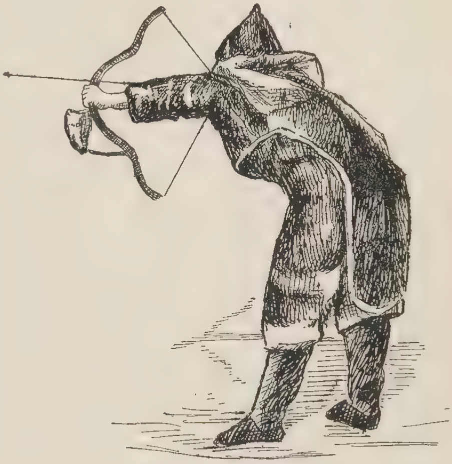
The *Alert* and the *Discovery* sailed from Portsmouth in 1875, both ships entering Smith Sound toward the end of July. Here they found the enemy waiting for them, and the game of man *versus* ice began once more. After a gallant skirmish the *Discovery* so far yielded as to establish herself in winter quarters, but the *Alert* nosed forward a little, until she came to a standstill in latitude 82° 27′ N. Before her the unusually heavy pack of the Polar ocean itself barred the way. Aware that he could not pass, Markham, who had command of the *Alert*, made his vessel fast to a floe, and settled down to spend the winter determined eventually to use the enemy as a means of advance. If there was no open water for his ship, at least frozen water should afford a passage for his sledges. And so, if not by one method then by another, he would still go on, and during the winter, in the security of the ship, plans were drawn up for investigations by sledges in every direction possible.

While Nares and Markham were thus cheerfully making their plans to fight a way to the Pole an equally vigorous explorer, many miles to the east of Smith Sound, was also waging war against the ice. Nordenskiöld, the great Swedish explorer, now no longer young in Arctic service, was as eager as ever in the cause of the Arctic. He knew the coasts of Spitsbergen and Greenland as a Londoner knows the Strand and Piccadilly; and now his great desire was to discover a path to Bering Strait by the east, and thus establish a North-east Passage. The British explorers had proved it possible to pass from the Atlantic to the Pacific by creeping along the shores of North America: Nordenskiöld now wanted to prove that a way might also be found by turning east instead of west, so that, by coasting Northern Europe and Asia, a ship might eventually reach Bering Strait, and thus emerge into the Pacific.

If Nordenskiöld could succeed in doing this then his path to Bering Strait, if joined to that of Franklin, Collinson, and M'Clure, would complete a circle. Together the two routes make a ring, inside which lie the North Polar regions. It was the Swede's ambition to prove it possible for a ship to sail round the Polar Seas, thus demonstrating that there was a navigable waterway right round the Arctic guarding the North Pole, that stronghold of the Ice King, as a moat in the Middle Ages guarded a baron's castle.

A sort of trial trip over part of the way having been satisfactorily made by Nordenskiöld in 1876, he succeeded in enlisting the sympathy of the King of Sweden, who, together with Mr Oscar Dickson, well known for his liberality toward Arctic exploration, and M. Siberiakoff, a rich Siberian merchant, gave warm support to the enterprise. Thus assisted, Nordenskiöld sailed eastward in 1878, hoping to conduct his ship in safety through the ice to the far-distant Bering Strait. So favourable was the summer and so wonderfully did Nordenskiöld navigate his course that by September in the same year he had rounded Cape Chelyuskin, the most northerly point of Asia, and made considerable progress beyond. He even hoped he might emerge into the Pacific before the winter. But, as ever, there was ice to be taken into the reckoning, and just when the explorers were hoping they were safe they were held up and forced to winter on the northern coast. There they stuck with their vessel, the *Vega,* like a thrush in a cage chirping, "I can't get out; I can't get out." Day gave way to day, and week to week, and month to month, without the ice yielding. Not far from this spot, in 1778, that fine voyager Captain Cook, having tried to enter the Arctic by way of Bering Strait, had met just such a pack of ice and had been forced to retreat. Now, almost a hundred years later, another explorer was in the same trap. Ice had blocked Cook's coming, as now it blocked Nordenskiöld's going: for coming and going are the same to ice; it cares nothing for either.

Nordenskiöld had fine courage; he knew how to wait, and after 294 days in the ice he at last got his ship free, triumphantly sailed through Bering Strait, and so completed the navigation of the North-east Passage, as he had set out to do.



ESKIMO BOWMAN

From Stefansson's "The Friendly Arctic"

While Nordenskiöld had been making his preliminary voyages in 1876 Nares and Markham, in their endeavour to reach the North Pole, were continuing their investigations from Floeberg Beach, where their ship the *Alert* was in winter quarters. Dividing their men into parties, they made sledge excursions in every direction, and on one of these Captain Markham and Lieutenant Parr, with their party, succeeded in making their way to latitude 83° 20′ N., thus surpassing Parry's record, made in 1827. From this enterprise Nares and Markham returned home safely in the autumn of 1876. They had not succeeded in reaching the Pole, but they had advanced nearer to it than anyone else up to that date; they had also brought back information on many subjects of great value to scientists; and by discovering a new stretch of coast-line they had very much enlarged our knowledge of the world.

Two other explorers may be mentioned here. In 1867 Thomas Long sailed, in the whaler *Niles*, along the south coast of what came to be known as Wrangel Island. Captain C. L. Hooper explored Wrangel Island in 1881.

The nineteenth century, with still twenty years to go, was already glittering with glory won in the Arctic. The North-west Passage, that jewel sought from the sixteenth century, had been captured; Franklin's great tragedy had left an impress never to be forgotten; and scores of men, the names of many of them unrecorded, had risked their lives among the ice, with the result that the entire map of the Arctic had been remodelled. The North-east Passage was achieved; Franz Josef Land had been discovered; strait after strait had been navigated: Sir James Ross had located the position of the North Magnetic Pole; new tribes of Eskimos had been discovered, and much had been learned about plant and animal life of the Arctic. The glory for all this belongs not to one or two men, but to many—to those who failed as well as to those who succeeded. Every man who had gone to the Arctic had played his part, and, the preliminaries having thus been performed, the stage was now set for a great spectacular performance. The North Pole had not yet been reached. Who would be the first to get there?

CHAPTER XIV

NORTH, EVER NORTH!

NOW that there was definite knowledge of both a North-west Passage and a North-east Passage, Arctic exploration slightly shifted its direction. Although there were still enormous tracts of unexplored land and water in the North Polar region, the map of the Arctic was now very different from its appearance at the beginning of the century. Many of the prizes struggled for since the Middle Ages had been won; but the prize of first discovering the North Pole was still to be gained, and efforts were now very largely concentrated on pushing farther and farther North.

From 1607, when Henry Hudson had left his mark in latitude 80° 23′ N., England had led the way nearer and nearer to the Pole. Hudson had been succeeded by Scoresby, Scoresby had given way to Parry, and in his turn Parry had been beaten by Markham. This English supremacy of nearly three hundred years was now about to pass into other hands, and the further steps to the Pole were to be achieved by the United States, Norway, and—strangely unfamiliar in the North—Italy. The last and final step was to be taken by the great American explorer Peary.

But between the fine achievement of Nares and Markham in 1876 and the success of Peary in 1909 a good deal was to happen, and it must never be forgotten that the later achievements, so splendid in their performance and so striking in result, could never have been made without the early, patient investigation of numerous forerunners.

There is an old saying to the effect that two parts of the success of an undertaking lie in knowing the way thither; on this reckoning two parts of the credit for reaching the Pole belong to the men who first investigated the possible paths. There were three routes among which an explorer had to choose. He could sail to Bering Strait, and push his way round past the New Siberian Islands; he could begin at the other end and, entering by the Atlantic, he could cross Baffin Bay and push up through Smith Sound; or he could press north from Spitsbergen by way of the newly discovered Franz Josef Land. Nares and Markham believed that their expedition of 1876 had proved that, of these three routes, the Smith Sound way was for ever hopeless. According to their report, the ice in this neighbourhood was such as to prohibit any future approach by that way to the North Pole.

ESKIMO PADDLING ON INFLATED SKIN

From Parry's "Voyages"

This opinion was to some extent borne out by Greely, an American explorer who in 1881 led an expedition in the same direction as Markham. One member of his party, Lieutenant Lockwood, by reaching latitude 83° 24′ in 1882 slightly outstripped the record of Markham, and thus gave the United States the lead. But the members of the expedition suffered terribly during their winters on the shore of Smith Sound, and were rescued only just in time to save the last survivors from dying of starvation. The suffering of these gallant souls is almost beyond the telling. So exhausted were they that when the wind blew down their tent they had no strength to lift it, and lay there, beneath the canvas, waiting for death. One of the party, half blind, gaunt, and reeling from weakness, fancying he heard a shout, struggled out of the tent and made weak, frantic signs. They were seen! A relief ship, sent to look for them, had arrived, and men came running to their aid. A graphic description of the scene is given by Dr Rolt Wheeler in his fascinating book *The Polar Hunters*:

> The relief party sped over the hill. The tent was down. No one in it could move. One of the members of the relief party took a knife, cut a slit in the canvas, and looked in. One man, with dropped jaw and glassy eyes, seemed dead. Elison, a wreck of a man without hands and feet, had a spoon tied to the stump of his right arm. Greely was on hands and knees, with long and matted hair, his form a skeleton and every joint bulbous and swollen. He could not stand. The other three were little better. There was not a morsel of food in the tent but two cans of a repulsive-looking jelly made by boiling strips cut from sealskin clothing.

During the years when Greely and his companions were thus enduring hardship on the shores of Smith Sound, an Englishman, Leigh Smith, was investigating Franz Josef Land, that favourite jumping-off ground for the Pole of later explorers. Mr Leigh Smith made several journeys to this region, and on one voyage (1881–2), his ship having been broken up by the ice, he and his companions spent an entire winter there, during which time they thoroughly explored the west coast.

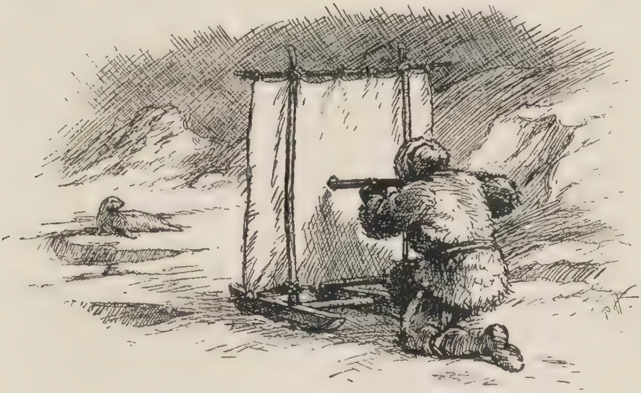
Bereft by the ice of the comfort of their boat, they were forced to shelter themselves as best they could. Bears and walruses were happily plentiful, and provided them with food; thus they were enabled to carry on their investigations, and to exhibit in the face of calamity that fine ability to rise above the stress of circumstances which distinguished the men of Frobisher's generation no less than those of our own. Swept by bitter hurricanes, buried under snow, and uninhabited by human beings, Franz Josef Land has one redeeming beauty—nowhere are there more lovely displays of the aurora borealis. These mysterious coloured fires give to the beholder that exquisite sense of joy which it is also within the power of music and poetry to awaken. Here, in the skies, are dancing wisps of colour, which might well be the "clouds of glory" of which Wordsworth sang. Among the Eskimos is a legend that these bright, swiftly changing forms are the children of the air, playing at ball. See them pass the glowing treasure from one to another! See their delicious movements as they toss the spangled trifle higher and yet higher! Dr Bruce, writing of the aurora, declares:

> It can scarcely be compared with any familiar object unless it be an imaginary ballet in the sky, where the figures are in extraordinarily rapid motion, passing in continuous procession, one line of dancers mingling with another, and a series of flashlights of different colours passing rapidly across the tinselly muslin drapery. The whole effect is weirdly beautiful, and has long been known in the Highlands of Scotland by the very fitting name of the "Merry Dancers."

And so, close to our own doors, we find a confirmation of that age-old folk-tale which describes the aurora as the ecstatic dance of children. But nothing at home can convey the dazzlingly lovely effect of these displays reflected upon an undisturbed landscape of white ice, lying beneath the darkness of a Polar night, when the invisible is made visible.

While Leigh Smith and his men were marooned on Franz Josef Land through the winter of 1881, the attention of the United States was centred upon two ships which had gone to Bering Strait to look for an expedition, led by Lieutenant de Long, which had sailed from America in 1879 in the hope of finding the North Pole.

Starting from San Francisco in July 1879 with provisions for three years, this expedition had been fitted out lavishly by Mr Gordon Bennett, the proprietor of the *New York Herald*, well known for his interest in every kind of sporting adventure, an interest which expressed itself, among other ways, in the sending of Stanley to look for Livingstone, and the founding of the Gordon-Bennett Cup.



SHOOTING SEAL THROUGH A SCREEN
From Kane's "Arctic Explorations"

The *Jeannette*, Lieutenant de Long's ship, began her voyage with the wind of hope behind her. The intention of her commander was to sail her through the Bering Strait, and to approach the Pole by way of the New Siberian Islands, and past Wrangel Island, memorable as the scene of one of the most recent tragedies in Arctic history. It was here that a band of men left by Stefansson to occupy the island for the period required to make effective its annexation to the British Empire perished in attempting to get away over the ice before the arrival of the ship sent to relieve them. The flow of the currents in the near neighbourhood of the Pole was still a matter of speculation; nor was it absolutely certain whether at the Pole itself would be found land or water. The discovery of Franz Josef Land had greatly increased the belief that land might extend for a long way north from there, but until some one had actually reached 90° N. nothing could be stated with certainty. It was not known then what all now know—that round the North Pole is a great stretch of sea, and round the South Pole a vast expanse of land. At the same time it would be quite erroneous to visualize the North Pole as a great stretch of water, and the South Pole as a vast expanse of land. At either Pole there is always ice. Except by air, the last stages of a journey to the North Pole must be made by sledge, not by ships. Below lies water two thousand fathoms deep, but on top of this lie ice-floes several years old.

The *Jeannette* set off gaily from the bright shores of San Francisco, and thus passed from the colour and warmth of that beautiful harbour to the greyness and desolation of the Arctic. Two years passed, and all that was known of her was that she had passed Bering Strait and had been seen in the direction of Wrangel Island. The United States and, indeed, the world became uneasy. Some message should have arrived ere this. So, on her track, went two more ships, like hounds after a hare. But though they explored Wrangel Island, they came back without news. Presently, from another source, came a sad tale of the end of the gay *Jeannette*. For nearly two years she had fought gallantly against the ice, and then once more the ice had won. In spite of every effort, in 1881 during a storm the *Jeannette* was crushed by the floes, like a nut between a pair of crackers. Her brave crew got away from their ship in three small boats; but alas for their hopes! Some perished in the storm, and most of those who reached land died from starvation; thus ended sadly a voyage that had begun so joyfully.

So the expedition had been a failure! . . . But those who spoke thus spoke too soon. De Long and most of his men had perished, but out of their deaths rose a new hope. The very pieces of the wreck brought a new clue. Fragments from the broken *Jeannette* floating down the east coast of Greenland, travelled past the south of that great island, and came to rest on its western shores, thus providing Nansen with an idea out of which sprang new and glorious achievement. De Long had died; the *Jeannette* had been broken to pieces. But Nansen, brooding over the wreckage and the current that had borne it, found his great inspiration, and when the *Fram* later nosed her way into the Polar pack side by side with her went a ghostly ship—the *Jeannette*.

CHAPTER XV

NANSEN IN GREENLAND

IN the history of great achievements there is nothing that is really trifling. The smallest incidents often enough have given rise to amazing results. Newton, watching the apple fall, pondered as to why the world, that immense suspended apple, did not also go tumbling through space; and Watt, watching his mother's kettle boil, groped after the possibilities of steam. So too Nansen, as we have seen, got his great idea of how to approach the Pole through some trifling wreckage from the *Jeannette* that was washed up on the west coast of Greenland.

The true adventurer is always a man of vision. It is this quality that urges him to venture all, life itself, for something that *his* eye can dimly see, but which is beyond the view of the ordinary man. Somebody once protested to Turner that he had never seen skies like those painted by the great artist. "Don't you wish you could?" was Turner's brief reply; thus he defined the difference between mediocrity and genius. And in every phase of life it is the same. The type of mind which sacrifices the world's rewards for a glorious hope that lies before is splendidly exemplified in Nansen, whose journey "farthest north" will be ever memorable for the spirit behind it, no less than for what it actually accomplished.

While he was still very young Fridtjof Nansen's imagination had been captured by the North. At the age of twenty-one he was in a whaler off the east coast of Greenland, coming back not only with a cargo of fish, but

DRIFT-ICE IN SUMMER AS PHOTOGRAPHED BY NANSEN

From "Farthest North," by Fridtjof Nansen, by permission of the author

NANSEN AND JOHANSEN SLEDGING THROUGH THE DRIFT SNOW IN 1895

From "Farthest North," by Fridtjof Nansen, by permission of the author

with a mind freighted with thought. Though he now settled down at home, first as Curator of Bergen Museum and afterward as Curator of Comparative Anatomy in the University of Christiania, Nansen remained instinctively the explorer. Like Raleigh, who as a boy brooded over the story of Columbus till he became himself a sailor, Nansen, brooding over the ice amid which the little whaler voyaged, became enthralled by the glamour of the North. The idea of penetrating to the rocky eastern coast of Greenland, so securely barricaded from approach by enormous masses of drift-ice, was smouldering in his mind when suddenly it was set aflame by the news that Nordenskiöld, who had been exploring Greenland, had returned in safety, bringing with him the intelligence that the centre of that great island was a vast field of snow over which ski had been most successfully used.

ESKIMO WHIP

Immediately Nansen's mind leaped to a conclusion for which it had been preparing. He would not only push his way to the coast of Greenland; he would cross from one coast to the other on ski. Born in a country where snowshoes are no novelty, he began to detail his plan—his ridiculous plan, as many considered it. But Nansen was not the man to be easily turned aside from his purpose. Without being reckless, he was capable of sticking to the last to any project about which he felt deeply, and as regards Greenland he was immovable, with the result that, in 1888, he set off, accompanied by Otto Sverdrup, two other Norwegians, and two Lapps, all being men who were skilled in the use of ski. The skipper of a Norwegian sailing-vessel, the *Jason*, agreed to convey them as near as possible to the east coast of Greenland, and from this point Nansen and his friends were to make their way as best they could, using small boats where there was water or crossing on foot across the floes. Then, supposing they were successful in reaching the coast, they would begin the great task of crossing the snow-covered interior.

Opinion was greatly against the probability of the success of the undertaking, but Nansen was determined that if the enterprise were to fail it should not be through lack of effort, and he did not take up the task till he had planned it carefully. He chose the east coast as his starting-point because of its difficulties. At the outset the explorers would all be fresh, and therefore, he argued, better able to grapple with hardship. The bitter east coast, harassed by the great chain of ice floating down from the North, and with very few inhabitants, would afford them little comfort. But the west coast, where the Danish Government and traders had long ago established little colonies, would be as an elysium spurring them on to further effort, and affording at last comfort and a welcome when, very weary, they would stumble into Godthaab. Such was Nansen's bold plan.

The little party of six, taking with them the food and equipment they would need on leaving the whaler, started by way of Leith on May 2, 1888. By the end of June they were well within the ice off the east of Greenland, and in the distance there was a hint of a coast-line. Nearer and nearer the *Jason* cautiously pushed her way, till she was within about twelve miles of land. The moment for parting had arrived. Nansen and his comrades left the ship; the *Jason* fired a last salute, and the adventurers set off. Each carried with him his own thoughts, his own hopes. Isolated from the world, in two small boats, they followed the narrow lanes of water running like dark threads between the ice that gleamed, with frigid whiteness, beneath a dark and clouded sky. Thus ended July 17, 1888, and thus began a perilous journey.

Two days later they entrusted themselves and their little all to an ice-floe, as their only safety from the pack, and on this drifting mass of ice they spent the next few days, anxious lest they should be suddenly dashed to death, but hopeful that the current would bear their ice-raft safely into open water. This hope was happily realized, and twelve days after leaving the *Jason* Nansen and his men found themselves facing open sea. Launching their two small boats with all speed, they pushed through the last of the floe-ice, and a few hours later stood upon the barren rocks on the east coast of Greenland.

In the joy of landing upon firm soil once more the perils of the future were for the moment forgotten. But not for long! There was a tedious journey north to be made before striking the point at which it had been decided to make the inland crossing. Every bit of baggage had to be pulled on sledges by the men themselves, for they had brought no dogs, and the labour of dragging a heavily laden sledge over rough, uneven, wind-hardened snow is considerable for even the strongest. Naturally only absolute necessaries were included, and always in the lightest possible form, dried fruits, for instance, being used instead of the much heavier kinds preserved in sealed tins.

For several days they toiled along the coast northward, the monotony of their journey being broken only when they struck one of the very few Eskimo encampments on the coast, or when, persecuted by clouds of mosquitoes, they had to do battle for their food. "Breakfast," writes Nansen, "was our greatest trial, for when one cannot get a scrap of food into one's mouth except it be wrapped in a mantle of mosquitoes, things have come to a pretty pass."

August was nearly over by the time that Nansen's party began the most perilous part of their journey—the crossing of Greenland, so strangely named, the interior of which, in the south, is an up-and-down stretch of ice, rising finally into a great plateau. Day after day their work was the same—sledge-pulling, meals, sleep; day after day the scenery was the same—ice, frozen snow, ice. Worn by this monotony, the six adventurers struggled silently forward, each enduring dumbly more than could be put into words.

Up and up rose the frozen ridges, till the travellers were more than 6000 feet above sea-level in a region so cold that even in the heart of summer only the uppermost layer of snow ever thaws, to be frozen solid again as soon as the brief summer is over. Nansen and his men froze too: their hair was hung with icicles; their lips glued together. As they slept their clothes thawed inside the sleeping-bag in which they huddled close together in an attempt to sustain warmth. But exposure next morning quickly froze the garments again, till they resembled ice-armour, in which the wearers stumbled heavily forward, forward, till September 20, when they got their first glimpse of a mountain-peak. Never was there a more heavenly glimpse than this one of a dark, distant ridge showing faintly through the driving snow.

For nine more days they trudged on, lured by the beckoning mountain, till they tasted the felicity of arriving in a valley down which flowed a blue, winding stream. The beauties of nature, untouched by ice, were radiantly appreciated by these weary wanderers across "Greenland's icy mountains." The only blot on their enjoyment was a plague of mosquitoes, which hung over them in a cloud just as their tormentors on the east coast had done. In this one particular, east and west proved to be alike; on both flourished the mosquito. From this point to Godthaab was child's play compared with their earlier labour, and in a few days the party arrived safely at that little colony, where they had much to tell. The Eskimo, who had long in his imagination peopled the interior of Greenland with a strange half-human race, must have been a little disappointed to be told that there were no such people, and that the huge tract which separated the east coast from the west was, in fact, uninhabitable, being simply ice and snow. But the creatures of imagination die slowly. It is quite likely that even now the Eskimo still weaves tales of a race of strange little men, living a life of their own in some corner of that great, silent interior.

This great achievement being successfully over, Nansen returned to Norway, and went back to his work in the University; but in his heart he still cherished thoughts of the Arctic, and strange longings pierced him as he watched the stars. What, he asked himself endlessly, is the meaning of life's everlasting rhythm? There came no answer to his cry, but he found comfort in the stars, "speaking peace as they do, those unchanging friends."

This strong kinship with the sun, moon, and stars, and those wonders of nature which are seen most clearly in solitary places, is one of Nansen's most noticeable traits. Resolute and intrepid in his bodily exploration, his mind journeys still more courageously into those mysterious, intangible regions which link up this life with the whole creation of God.

An item of news in a newspaper had determined Nansen to attempt the crossing of Greenland; and now, in 1884, a second great idea was to spring into his mind from a similar source. Glancing through a Norwegian magazine he began idly to read. Soon his attention was caught by an article in which it was stated that fragments of certain objects belonging to the *Jeannette* had been picked up on the south-west coast of Greenland.

This statement, of little importance to the stay-at-home man, assumed supreme consequence for Nansen, who saw in it the proof of a current flowing from the north right through the regions round the Pole. Whether these regions were land or water had so far never been definitely ascertained. The *Jeannette* had been crushed in the ice off the New Siberian Islands; how, then, did these relics—a list of provisions signed by de Long, a list of the *Jeannette's* boats, a pair of oilskin breeches belonging to one of the crew, and part of a cap belonging to another—find their way from the ice in the north to the south-west shores of Greenland? Various people answered in various ways. Some said the relics were not genuine, and therefore were of no evidential value; others declared that they had come on a floe that had floated by way of Smith Sound, already a well-known route.

Both these ideas were scouted by Nansen, who came forward with one of those new and startling ideas that distinguish him as a man not only of intellect but also of intuition. These battered remnants of that once gay ship the *Jeannette*, he affirmed, had travelled from the far-distant scene of the wreck, not by Smith Sound and thence straight down Greenland's west coast, but from the north in a line cutting, if not through the Pole, then not far from it; emerging on the east coast of Greenland the articles had been swept round the south, and then up the west coast till they reached the spot where they were found. Now, argued Nansen, supposing the existence of a current, at present unknown, but flowing from the neighbourhood of the New Siberian Islands in the direction of Franz Josef Land, is it not reasonable to conclude that a ship might take the same path as the wreckage, and thus, drifting with the ice, pass nearer to the Pole than has so far been thought possible?

To this bold suggestion many brilliant explorers retorted quickly, "Yes; but first of all prove to us that the *Jeannette* wreckage did actually take this route." To which Nansen could only reply by reaffirming his belief that the route *had* followed the line he had indicated. Actual proof was impossible; but intuitively he felt that he was right. And on this assumption he suggested that a strong ship, specially built to withstand the grip of the ice and of such a shape that under pressure she would rise upon it, should be forced into the ice from the neighbourhood of the New Siberian Islands, in the hope of finding a drift which would convey her in safety, albeit slowly, across the North Polar regions and out by way of Franz Josef Land. In support of his theory he pointed out that along the east coast of Greenland was a deep and powerful current which near its origin, somewhere in the north, must be of great depth, since it supplied so powerful a flow of water. Twenty years earlier Sir Clements Markham had referred to the existence of such a current, but Nansen did not know this, and his arguments were founded on entirely independent thinking. Following out his reasoning, he declared that somewhere near to the Pole itself must lie a deep basin of water. This idea was, of course, strenuously opposed by those who believed that in the immediate vicinity of the Pole was a huge tract of land that must effectually block the passage of any ship. It was also opposed by a number of others, many of them brilliantly clever men who saw Nansen's scheme as a wild-goose chase that would inevitably result in loss of human life. Among the latter was A. W. Greely, the great American explorer, who had nearly lost his life through his terrible sufferings on Smith Sound. Only too keenly aware of the awful hardships of the Arctic, he did his utmost to oppose an idea that seemed to him madness. "Dr Nansen," he declared in an article published in a magazine of the day, "has got an idea he knows a way to the North Pole. Being young, inexperienced, and very courageous . . . he intends to start for the North Pole *via* Bering Strait." After which Greely went on to say that, out of twelve of the best-known authorities on the Arctic, not two were at all favourable to the notion. "Imagine," he says, "if one can, the horrors which a drift-journey in boats would entail, even in latitude 84° with five months of unbroken night, and continuous cold of extreme severity." "In fact," concludes a reviewer of Greely's article, "the moral is that unless Dr Nansen wishes to commit suicide, he had better remain at home."

Meanwhile Nansen, being "young" and "very courageous," went quietly on with his preparations.

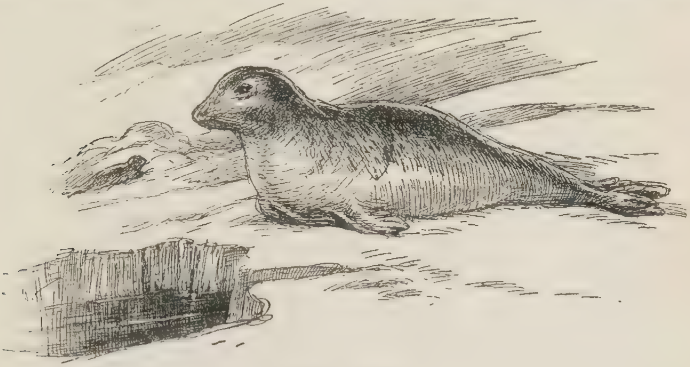
CHAPTER XVI

NANSEN'S ATTEMPT TO REACH THE POLE

THE idea which had taken root in Nansen's mind on his reading about the *Jeannette* wreckage bore visible fruit in 1893, when with a picked company of men he set out in the *Fram* to put his theory to the test. A sum of nearly £25,000 had been subscribed for the expedition, largely by the Norwegian Government and the King of Norway, but including generous subscriptions from private individuals and the Royal Geographical Society, with the result that everything that forethought could suggest had been provided. The *Fram* was warm and very stoutly built. In shape she was like the half of an egg divided lengthwise, and she had no projections outside her hull which the ice could grip. Therefore, when subjected to intense pressure she would, like an orange pip squeezed between finger and thumb, rise to the top of the ice and ride safely upon it. Her provisioning was of the best; her crew were men of fine physique and great heart; their equipment was as perfect as could be obtained; and sledge dogs awaited them at their first port of call in the Arctic. The perils of the undertaking were readily acknowledged, but all on board, from Nansen downward, believed that finally they would accomplish the purpose for which they were setting out. So sailed the *Fram* on June 24, 1893, and for three years all on board passed out of the common world of men, exchanging all that is friendly and familiar for the isolation and bitterness of the Arctic. In the days that followed Nansen, standing on the bridge, sometimes tortured with sea-sickness, brooded over the strange, deep-rooted motives that had driven this little band of men into a search for the unknown. At the outset the weather was excellent, but before very long fog rolled over them in a deep, irritating cloud. Not only did it make the air raw, but it depressed the men, and a deep melancholy settled upon the company in the little *Fram*. Then came ice, much sooner than was expected, and already it seemed to enter into their souls. Never had home seemed so desirable as when, the first excitement of starting over, they settled down to their task.

Then once more a miracle happened. The fog lifted, the ice-floes parted, and the *Fram* sailed contentedly into open sea. Like magic the atmosphere on board changed; those who so recently had been more than half inclined to regret their undertaking now reacted to new hope, and were lit with enthusiasm for the North. Through the perilous Kara Sea, and past Cape Chelyuskin went the *Fram*; then, steering north, Nansen set her upon her new and dangerous course. She was now heading directly for the Polar ice, with the expectation of soon being frozen in. Cautiously she crept forward till she had reached latitude 77° N.; then on again, still creeping, to 78½° N.; then a pause—a new effort and a new rebuff. For the moment there could be no more progress; within the ice, firmly frozen, lay the *Fram*, with the calendar announcing September 25, 1893. Nansen's plan had begun in earnest. The *Fram* had been deliberately forced into the ice; what would now be her course? Would she drift right across the Polar Sea, and find harbourage off Franz Josef Land? If so, then Nansen would be proved right, and the *Fram* and her crew would emerge victorious. But if not? All sorts of possibilities presented themselves to these men who were only too well acquainted with the dangers of the Arctic, but in spite of these every one was cheerful. The

Fram was provisioned for five years, long before the end of which time they hoped to reach their destination, for Nansen had calculated the time taken by the relics upon their journey across the Polar basin. Having entrusted themselves to the care of the drifting ice, there was nothing to be done, save to watch vigilantly, with eyes ever open to gather knowledge from their surroundings. Nansen had repeatedly stated that his object was not so much to reach the exact location of the Pole as to obtain general information about Polar regions. "To reach this point," he says, "is intrinsically of small moment. Our object is to investigate the great unknown region that surrounds the Pole."

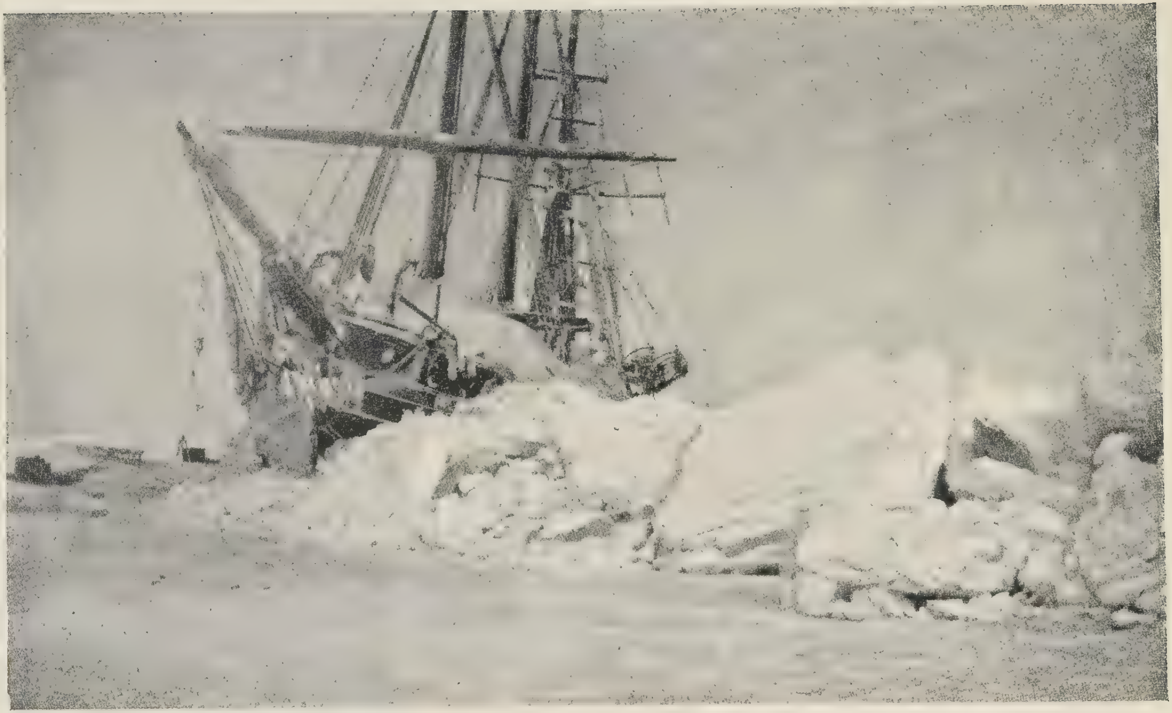


ARCTIC SEAL

And so, from the time the *Fram* entered the ice till she emerged triumphantly, every trained eye aboard her was busy observing the changes in the sky, the ice, and the currents that determined the movements of the ice which bore with it the *Fram* and her crew. The autumn of 1894 found the *Fram* still drifting, but so slowly that Nansen calculated it might take four years to bring them to Franz Josef Land. They were now not far from latitude 82° N. Being convinced that the drift of the ice would not carry the ship as near in to the Pole as he had hoped, Nansen began to turn over in his mind a new and venturesome scheme. At some given point, say latitude 83° N., he and another would leave the ship and make a dash for the Pole, which would then be nearly five hundred miles away. The two adventurers would take with them dogs, sledges, and food, and make every effort to reach the Pole. From their farthest north, wherever that might be, they would make their way, if possible, to Franz Josef Land. Meanwhile the *Fram* would continue on her drift across the Polar Sea, from which she would in all probability emerge also in the neighbourhood of Franz Josef Land.

This scheme, which was hazardous enough to daunt most men, grew daily in favour with Nansen, and he communicated it to his lieutenant, Otto Sverdrup, in whose charge he proposed to leave the vessel. Sverdrup, whose heart was no less courageous than Nansen's, longed to be his leader's companion on the journey. But both could not leave the ship. One wish only did Sverdrup express: if Nansen should arrive home first, and should propose a journey to the South Pole, he should await the arrival of the *Fram*, so that Sverdrup could be included in the expedition! Was there ever a more gallant request, or one which showed more complete confidence in a leader? Locked up within the Arctic ice, these men did not yearn for rest and green fields; their indomitable minds pictured new voyages in a climate no less bitter than they were at the moment experiencing! Of such are the salt of the earth, brave hearts, fearing no evil.

Nansen, having chosen as his companion Frederik Johansen, now began careful preparations for the adventure, and on March 14, 1895, the two men set off, taking with them twenty-eight dogs, and food, sledges, and *kayaks* weighing in all about 2100 pounds. Behind them lay the *Fram*; in front an unknown, absolutely uninhabited waste.



THE "FRAM" AFTER AN ICE-PRESSURE

From "Farthest North," by Fridtjof Nansen, by permission of the author

NANSEN AND JOHANSEN CROSSING A CRACK IN THE ICE

From "Farthest North," by Fridtjof Nansen, by permission of the author

Over this ice-covered region Nansen and Johansen took their way for week after week, making incredible efforts. One by one, as food grew less, the dogs were killed and eaten, a proceeding that, necessary though it might be, filled Nansen with bitter remorse. These dumb creatures, toiling to achieve a purpose about which they knew nothing, beaten when they flagged, and eaten when food was short, how must they have regarded those masters in whose service they literally spent their lives? What a tale of the North would be theirs had they the power to put into words their tragedy!

The bright hope of actually reaching the Pole faded in Nansen's mind as the bitter days passed. "This continual lifting of the sledges over every irregularity is enough to tire out giants," he wrote. ". . . I am rapidly coming to the conclusion that we are not doing any good here. We shall not be able to get much farther north." And with splendid courage he added: "I therefore determined to stop, and shape our course for Cape Fligely." They had reached latitude 86° 14′ N., thus establishing a new record "farthest north." And now began the journey home.

It was April 8, 1895, when the two men turned about, but it was nearly the end of July before they approached the edge of the close pack on which they had lived for months. "At last," writes Nansen, "the marvel has come to pass—land, land! . . . After nearly two years, we again see something rising above that never-ending white line on the horizon yonder. . . . A new life is beginning for us: for the ice it is ever the same."

What this land really was Nansen could not decide. He imagined it to be on the west of the group of islands known as Franz Josef Land. But the days of darkness were drawing near, and there was no chance of seeing home until 'darkness-time' should be over. And so these two men—alone in the vast silence—passed another long, bitter winter on this northern, uninhabited shore. What if one of them were to die? But each pushed that dreadful thought away. Meanwhile, with horrible greasy clothing stuck fast to their bodies, they dreamed of warm, clean woollens, of hot water for washing, and of the comforts of a roof. And so they solaced each other, these two derelicts in a frozen, solitary land.

MEETING OF JACKSON AND NANSEN

After the picture in Nansen's "Farthest North," by permission of the author

The winter of 1895 had given way to June 1896, and the two men were preparing to resume their journey south, when suddenly across the clear air Nansen heard the distant shout of a strange voice. It thrilled him as no music could do; for more than a year he and Johansen had heard no voice save each other's. He listened, trembling with excitement. It came nearer. It was English! And the next moment Nansen had grasped the hand of Jackson, of the Jackson-Harmsworth Expedition,[1] and had learnt that the ground on which they stood was indeed Franz Josef Land.

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[1] This expedition was organized by Alfred Harmsworth, afterward Lord Northcliffe, proprietor of the *Daily Mail.*

From this moment Nansen and Johansen fared like princes. The English expedition welcomed them with cheers, and treated them royally. From these friends they parted on August 7, when the *Windward*, which had come out with supplies for Jackson, took them home, landing them in Norway a few days later. Nansen had the exquisite joy of sending, from Vardö, messages to his friends, announcing his safe return, and this great joy was heightened a few days later by a message to himself from no less a person than Otto Sverdrup, announcing that the *Fram* had returned safely and had reached Norway with all well. Thus ended in a manner befitting a fairy tale one of the pluckiest journeys ever undertaken. Nansen and Johansen had made a great advance on all previous Poleward records, while to Sverdrup fell the honour, scarcely less great, of bringing back in safety the *Fram* and her crew. Heroes all, every one of them, and well meriting their happy fortune! Though the expedition had not succeeded in reaching the Pole, it had proved that within two hundred miles of that long-sought point there was deep water; it had proved that Nansen was right in his conjecture as to a current flowing down from the north through the Polar seas toward Spitsbergen. In addition to this valuable discovery, the *Fram* had brought back a budget of most important knowledge, gleaned by observation during the ship's slow passage home. So far from being a failure, the expedition had succeeded gloriously. Amid the Polar ice the Norwegian flag flew, "farthest north." But the battle was not yet over. Others were brooding in their turn, as Nansen had brooded, over the still-hidden secrets of the North. The Arctic seemed to have caught the imagination of the whole world. Not yet had the Pole been reached. But inevitably its conqueror would arrive.

CHAPTER XVII

THE FIRST ATTEMPT THROUGH THE AIR

AS generations come and go so do methods come and go, for it is natural that the young, of whatever era, should believe that to them has been given the key of life. Thus the problem of disease has been attacked in many different ways by many different generations. Sometimes a 'new' theory is found to be merely an idea that was born in the days of antiquity, and it frequently happens that the next generation, though it may or may not swing back to an ancient theory, discards the opinions held by the generation immediately preceding it. And thus the world is served; and, in spite of ups and downs, progress continues.

So, too, with Arctic exploration. Since the far-back days of Frobisher, when men set out to find the Pole with little more than a tiny ship, a very poor compass, and a supply of salt beef and beer, there had been an enormous change in the methods of explorers. The ship, which to Frobisher's idea had been the sole means of reaching the Pole, had with Nansen become a base only, and for the last part of the journey he pinned his faith to dogs and sledges. This idea was improved upon by Peary, who believed that the secret of success in the Arctic lay, not in carrying European methods thither, but in copying precisely the habits of the Eskimos, acquired by bitter experience. So that the ship was no longer in herself sufficient. At the proper moment she must be discarded for *kayaks*, ski, sledges, and dogs.

In one ingenious Swedish brain was an idea of an entirely different kind. By means of a balloon Salomon Auguste Andrée dreamed of rising literally above all other methods. He would travel to the Pole in a balloon, the course of which would be directed by guiding ropes and sails. It was in 1897 that Andrée made his daring attempt, but in the years that have elapsed since then there has been an astonishing advance in man's endeavour to navigate the air. It is well to remember that in the early years of this century most people laughed at the suggestion that flying might become a practical achievement, and the large money prize offered by the *Daily Mail*, to compete for which aeroplanes flew round Greater London, was a thrilling event to many thousands of people who saw for the first time an aeroplane in flight. So that, in considering Andrée's achievement, it is well to remember that in his own day his idea was much more daring and wonderful than it may perhaps at first appear to us who live in an age when aeroplanes have flown across the Atlantic and air-trips from London to Paris are a commonplace of everyday travel. Even to think of attempting to reach the North Pole by balloon revealed a mind of extraordinary daring and brilliance.

Between splendid thought and successful achievement lies a deep and horrible chasm. Even granting Andrée his balloon, before he could reach the Pole he must do battle with the elements. He must face terrible cold within a space too narrow to permit of exercise; worst of all, he must be prepared, day and night, to do battle with the wind—an enemy even more difficult to circumvent than the seaman's enemy, ice. Fully aware of the danger in front of him, Andrée not only kept his enthusiasm, but he so infected others that he obtained a sum of £7000 for his scheme, and found two other enthusiasts, Frænkel and Strindberg, who were willing to risk their lives with him.

And so the best balloon that could be made was constructed and fitted up, not only with food and clothing, but also with light boats and sledges, so that should the explorers be forced to land upon an ice-floe they might be able to make their way back to safety.

In 1896 the balloon was transhipped to Spitsbergen, from which point the ascent was to be made. Everything was ready, and Andrée and his companions were itching to be off, but the wind held them back. It blew continually from the wrong direction, till the brief summer was over, making any attempt that year pure madness. So the disconsolate three returned home, bringing with them their balloon.

But next year saw them back, with their balloon, on Danes Island. Here they were visited by the crew of the *Fram* on her voyage home, and from here they at last set off on July 11, 1897. The long-hoped-for wind from the south blew, and the spirits of the three adventurers soared high. This was their moment! And, the ropes being cut, the balloon, like their spirits, rose joyfully.

Andrée expected to be blown toward Siberia, and, well aware of the many predicaments in which they might find themselves, he warned his friends not to be uneasy should they hear nothing from him until an entire year had gone by. Every precaution had been taken, and in the balloon were pigeons, to be sent forth at intervals with messages.

One pigeon only, from latitude 82° N., came back. Not a remnant of the wonderfully contrived balloon was ever found! On the day on which Andrée, Frænkel, and Strindberg passed out of sight of those who cut the ropes of the balloon they passed out of human knowledge. What their fate was probably none will ever certainly know, but that they were gallant souls is beyond all question.

CHAPTER XVIII

SVERDRUP ONCE MORE

ANDRÉE'S balloon had already sailed off on its adventure into the eternal ere the *Fram*, having breasted a thousand perils, returned safely to Norway. When Nansen and Sverdrup met their emotion was too deep for words. It seemed almost incredible that the party should thus be safely reunited, and the two leaders of the expedition in particular must have realized the greatness of the miracle. But in their great hearts the flame of adventure still burned; their sufferings seemed only to give it a clearer glow, and when Nansen, but a few days after their reunion, asked Sverdrup if he would be prepared to lead another expedition to the Pole Sverdrup eagerly accepted. Thus, long before public excitement over the return of the *Fram* had subsided, the vessel was being prepared for yet another Arctic voyage for to the true adventurer there is nothing in life that can compare with the joy of adventuring. Money is nothing, comfort is nothing; it is the adventure itself that is at once the labour and the reward. Sverdrup, safely back from one struggle with the ice, desired nothing so much as a second encounter.

This ambition was realized on June 24, 1898, when in command of the *Fram* Sverdrup set off for the cheerless shores of Smith Sound, intending to push as far north as possible, and from his winter quarters to endeavour to sledge over the ice to the Pole. As ever, the great enemy was ice, and eventually finding progress impossible, Sverdrup was forced to winter farther south than he had planned. Choosing a spot on Hayes Sound as his winter home, he and his men spent the long weeks of darkness in carrying out investigations by sledge over the neighbouring land, making valuable discoveries particularly in Ellesmere Island. Winter passed, and the swift-flitting summer season came. Every effort was made to sail the *Fram* farther north, but pack-ice still barred the way, and so a course was set for Jones Sound. The second winter was at hand, and the camp was set up at Havenfiord, where, in the darkness, the *Fram* lay inactive in her cage of ice, while over the frozen sea Sverdrup and his men went out on sledge expeditions, gathering much useful information. Then at last came the sun—only those who have lived through long weeks of darkness can appreciate what a miracle it seemed! The second winter was over; spring journeys, of much greater length, could now be undertaken. Up the north-west coast of Ellesmere Island they went, men and dogs, till the coast began to take a bend to the east, and this point they named Land's End; from

WINTER HOLE OF A BEAR

here they pressed still farther north till they reached a point where a bear was shot, and from here, Little Bear's Cape, they turned to go back to the *Fram*, waiting for them motionless in the ice. Once more came summer, like a swift-flying bird of paradise, always going almost before it was seen, and yet leaving behind it a bright glow of hope and colour, to sustain the explorers through yet another winter. Under modern methods, however, a Polar winter camp can be a very pleasant affair, and the extensive use of sledges has had the effect of allowing the explorer to make his journeys earlier in the winter and spring, when the ice will stand such travel. A frozen sea, an insuperable barrier to the earlier seamen, dependent upon their ships, to the modern Arctic traveller affords excellent roadway.

The *Fram*, now freed from the ice, had drifted to Cardigan Strait, from which point she was finally steered back to Jones Sound, where the third winter camp was formed. From here, as early as possible, Sverdrup was anxious to investigate thoroughly the islands to the west of Ellesmere Island, for he did not want to keep his men, who had already endured so much, in the North through a fourth winter. Every effort was, therefore, made to press on with the work in hand, which was done with such splendid success that when, on July 20, 1902, the nose of the *Fram* was pointed for Baffin Bay, and so for home, Sverdrup brought with him records of much newly explored land. He had hoped to reach the Pole; opposed by ice, he had been beaten in this endeavour, but he had explored four great islands, hitherto undiscovered, lying to the west of Ellesmere Island. These four, Axel Heiberg, Ellef Ringnes Land, Amund Ringnes Land, and King Christian Island, formed a trophy of which the party might well be proud.

In addition, they had studied Jones Sound, and their observations made during three long winters in the ice were of immense scientific value.

And so once more the *Fram* came home, having completed yet another adventurous voyage. Nansen's belief in her was fully vindicated. Homely though her lines might be, her record was a proud one, and worthy of the brave men who had sailed her.

CHAPTER XIX

ITALY TAKES A HAND

WHILE Sverdrup in the *Fram* was striving to reach the Pole by way of Smith Sound an Italian expedition was preparing to attack it from the opposite side, by way of Franz Josef Land. That is to say, the main hope of the party would be sledges; leaving their ship in some safe harbour, they would strike north on foot from their base, trusting that, with ski, sledges, and dogs to assist them, they would finally reach latitude 90° N. and so arrive at the northern end of the world's axis. The earliest explorers had fought gallantly to push their ships up to this coveted latitude; Nansen had followed the principle of passivity, and had hoped to drift to the goal; Andrée had dreamed of sighting it from his balloon; Sverdrup had pinned his faith largely to the use of ski, and practically all Arctic travellers now shared his view that if the Pole was to be reached it would be done by patient foot-slogging. Ice had at least won the victory against ships, but she had not yet beaten man.

And now, after long years of indifference, Italy, once the home of great seamen, again exhibited an enthusiasm for exploration, and from that bright and lovely land to the cold and merciless North flashed an inspiration out of which sprang an expedition led by the Duke of the Abruzzi.

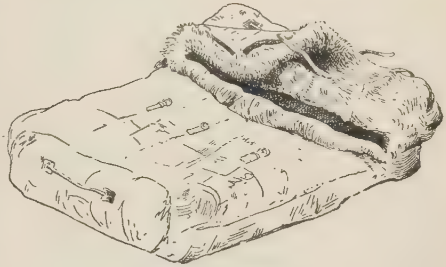
In June 1899 the *Polar Star* left Christiania, and by the time August was ended the adventurers were hemmed in with ice off the north coast of Franz Josef Land. Making their winter quarters in Teplitz Bay, on the coast of Prince Rudolf Land, they settled down for the months of darkness, during which busy preparations were made for the sledge journeys in the spring. Largely for the sake of exercise, they groped painfully on day journeys in the vicinity of the camp. How terrible the smallest excursion over Polar snow and ice in darkness can be only those who have experienced it can realize. When the house is in darkness a man can easily stumble and thus break his leg in his own home. How immense, then, are the difficulties of a region shrouded day after day in a pall unbroken by any ray of sunshine! How uncanny a landscape with snow underfoot, and overhead an atmosphere which at its brightest is only twilight! The Arctic explorer requires not only sight; he stands in urgent need of a sixth sense, to enable him to apprehend, without seeing them, the pitfalls that literally bestrew his path; he needs a sense so responsive to the variation in atmosphere which accompanies the variety in levels that he can tell by instinct whether in front of him lies a precipice or safe ground.

In Teplitz Bay in 1899 Christmas Day was kept with high festivities. Fireworks and bonfires brightened the scene, and flung a fiery challenge to the gloomy sky. Winter was not yet dead, but his days were fewer. Spring would be coming, and with spring the great attempt to reach the Pole would be made. Thus Italy's sunshine flung its challenge to the North, while the ice seemed to murmur, "Wait and see."

Before the year closed frost had secured one victory. The brave Duke of the Abruzzi, badly frost-bitten on one hand, had to have two of his fingers amputated. This made it impossible for him to help with the sledges as before, so he put in charge Captain Cagni, under whom a carefully considered sledge expedition north was begun on February 19, 1900. But the frost had not yet done its worst. Lower and lower dropped the thermometer, till it was 61° F. below zero—an intensity of cold to appal the warmest heart. Captain Cagni, who was prudent as well as courageous, felt that no one could stand against such severity, so he brought his party back to the *Polar Star*, to wait for a milder spell.

But in March, just before the ominous Ides, he set off again with a party of eleven, divided into three little groups. According to instructions, the first and the second groups, their part of the work done, were in turn sent back to Teplitz Bay, while the third party, led by Cagni, pressed onward toward the goal.

After much suffering the second group arrived safely at Teplitz Bay. But where was the first detachment? It had not arrived, nor was it ever again heard of. The Arctic had claimed those three brave men and true, and somewhere under the drifted snow or treacherous ice their bones lay hidden.


A SLEEPING-BAG

Meanwhile Cagni, buoyed up with the hope of reaching the Pole, pressed on, though he was now himself racked with torture from a frost-bitten finger, which made his days a misery and his nights a torment. Inside their sleeping-bags the moisture from their lips froze as they slept; their clothes, which by day had been stiff with ice, thawing somewhat from the warmth of their bodies, froze again into stiff armour a few moments after they crawled out into the open air. Alternately wet and frozen, half mad with pain, and feeding upon miserable foods, Cagni and his men, with magnificent pluck, pushed forward over the uneven ice, while snow blew wildly about them, as if weaving for them a shroud.

On April 24, some forty-four days after they had set out from the ship, they found their reward. They had reached latitude 86° 34′ N., which was beyond Nansen's record, and the Italian flag flew proudly nearest the Pole.

At this point Cagni determined to turn back. The party had done its utmost; to go farther might cost them their lives.

And here, once again, they proved that truism of exploration, that the way back is even more important than the road forward. The drifting ice-floes bore them out of their course. They began to fear they might miss Prince Rudolf Land altogether. At the moment of turning back they had had enough provisions for thirty days—that is, until about the end of May. But when the last days of May were running out they were still a long way from their base. Every scrap of food was treasured like gold, for in these barren districts there was little or no hope of finding anything that might serve as food. So far the dogs had been killed only to afford a meal for the remaining dogs, but so desperate were the men that they too ate of the flesh of the animals that had served them so well. It seemed probable that ice would once more win, and that Cagni and his three companions, like that first little group, would perish in the snow. Happily this was not to be, and on June 23, 1900, four haggard men saw, with joy unspeakable, the *Polar Star* before them. Famished, filthy, and worn with their heroic struggle, their ship was a veritable ark of safety. They thankfully dragged themselves to it, broken with their effort, but proud in the knowledge that they had travelled farther north than any other human beings, and had won for their country the honour of approaching nearest the Pole.

CHAPTER XX

PEARY TURNS EXPLORER

NARES and Markham in their great expedition of 1875 believed that they had proved conclusively that if the Pole were to be reached it would not be by way of Smith Sound. This stretch of water, which is to be found off the north-west coast of Greenland, is one of the waterways by which great icebergs sail down from the Polar Seas. Here, too, from Kane Basin, come the menacing ice-floes set loose from Greenland's Humboldt Glacier. Along the narrow stretch of land bordering on Smith Sound is a small community of Eskimos. In their little kingdom flourishes no corn. No roots grow there, and no shrubs. The eye, sweeping to the horizon, travels over an expanse broken neither by hedges nor trees. When summer comes for a brief spell there is life and colour. On the lowlands all the snow melts in the summer. As the snow melts it sets free the precious substances which sustain plant life. These, when they dissolve, support a quick and luxuriant growth, making the sheltered places, for a brief time, bright with mosses and flowers. But the brief, bright season ends; long before winter comes in temperate climes the snow has once more frozen. The country shows itself again inactive and benumbed. The Smith Sound Eskimo, waging a day-to-day struggle against the elements, is satisfied if he can maintain a warm and well-nourished body, and thus win a victory over the cold that would otherwise slay him. Occupied incessantly in their battle for life, the majority of them, though within limits great travellers, seem to have little ambition to penetrate to regions unknown to them or their forbears, unless instigated and accompanied by a great leader. It is safe to say that if the conquest of the Pole had depended upon the Eskimo taking the initiative it would never have been effected. Long centuries of life among the severities of ice have numbed the sensibilities and limited the aspirations of a race naturally unimaginative.

From this quarter, once regarded as affording the most likely approach to the Pole, attention was diverted in 1872 by Payer's discovery of Franz Josef Land. This great group of islands, lying to the north of Spitsbergen, at once showed itself as a likely jumping-off ground. It was from here that the Duke of the Abruzzi and Captain Cagni led their gallant expedition, giving to Italy in 1900 the honour of having penetrated "farthest north." This success, coupled with the emphatic assertion of Markham that any approach to the Pole from the west of Greenland was hopeless, made it seem probable that all further attempts would follow the route taken by the Italians.

However, in the brain of a young American was the germ of an idea that was to produce an entirely different point of view. Robert Peary, then a young lieutenant in the United States Navy, happening to alight upon an article describing the inland ice of Greenland, became so fascinated by what he read that he determined to investigate these wonders for himself. Thus Peary took his first step toward the Pole.

It is interesting to remember that it was pondering over the ice of Greenland that gave impulse to both of those great explorers Nansen and Peary. And in both cases, once having visited Greenland, the fascination grew into an absorbing and lifelong passion.

Having resolved to go to Greenland, Peary resolutely set about making his preparations. He applied for leave from the Navy, and by the beginning of June 1886 he had arrived in Disko Bay, which lies on the west coast of Greenland. Before the month was over he set out with one companion across the mainland, keeping continually to the east, the goal of his ambition being some day to cross the ice-cap.

From this reconnoitring expedition Peary returned at the end of July, convinced once and for all that he must be an explorer.

This ambition, smouldering in his heart, was quickened into fresh life in 1888 by the news that Nansen had successfully crossed southern Greenland, and he immediately determined to seek support for his desire to explore the unknown northern parts of Greenland. So eloquently did he plead his cause that in 1891 he was able to set off, hoping to out-Nansen Nansen.

CHAPTER XXI

THE NORTH POLE REACHED

HAVING decided to devote his life to Polar exploration, Peary bent the whole of his energies upon solving the problem of how to reach the Pole. After much thought he came to the conclusion that the most likely place from which to make the attack was the very district declared hopeless by some of the most experienced explorers. A route by Smith Sound was impossible—so Markham had said; but Peary replied thoughtfully, "Is it?"

Having made his preparations, he left the United States on June 6, 1891, taking with him his wife and four men, one of whom was Dr Frederick Cook. Peary's idea was that they should proceed as far north as possible up the west coast of Greenland, and then, selecting a spot for a winter camp, should learn to live like the Eskimos. This, he believed, would be of immense service to him in organizing his attempt to reach the Pole. If he could accustom himself to dress like the Eskimos, eat their food, and sleep in a snow-hut, or *igloo,* then with the help of dogs, snowshoes, sledges, and ski he might reasonably hope to endure great marches.

The early users of sledges had drawn them themselves. Panting and perspiring they had pulled great loads across jagged ice and snow in such a temperature that perspiration froze as quickly as it formed. Nansen had been one of the first to appreciate the value of dogs, which would not only pull the sledges but would in emergency afford food for their masters. Peary carried this idea one step farther. He would employ a *great many* dogs and *very few* men, by this means enormously lightening the burden to be carried, and definitely regarding some of the dogs as future food for the rest of the teams.

Another of Peary's theories was that the Eskimo's fur attire, with the fur worn inside to provide greater warmth, was absolutely essential. The gallant Cagni and his men had struggled "farthest north" clad only in woollens; Peary believed that the health and happiness of an exploring party, to a very large extent, depended upon an entire outfit of fur.

SUMMER TENT OF ESKIMOS

So firmly did he hold this view that, having reached M'Cormick Bay, on the north-west coast of Greenland, where he pitched his camp for the winter 1891–92, his first step was to get a family of Eskimos to come to live near to him, in order that they might sew fur garments for his party. This being satisfactorily arranged, presently on that ice-bound, desolate strip of coast-line were to be seen the Peary party of six, living side by side with an Eskimo man and his wife and two babies. The Eskimos lived in a skin tent, but Peary built a small wooden hut for his family, and called it Red Cliff House. Thus began Peary's intimacy with the Eskimos, an intimacy which deepened rapidly. For the next twelve years he spent at least some part of each year among the Smith Sound Eskimos, getting to know them in a way that only a prolonged stay among them made possible.

This American stranger, once an object of the keenest curiosity, became so familiar and beloved that the Eskimos looked upon him almost as their leader, turning to him for all manner of advice. And in 1905 the bond was drawn even closer, for Peary was then received into the tribe. He spent the months of darkness with them, living entirely as they did. This sojourn was repeated in 1906, 1908, and 1909. No man ever served an apprenticeship to the Arctic more faithfully than Peary, and his final triumph was largely due to this patient study of Arctic conditions, for the pluckiest man may easily be outdone by the elements unless he is prepared for every emergency, however remote it may seem at the time of setting forth.

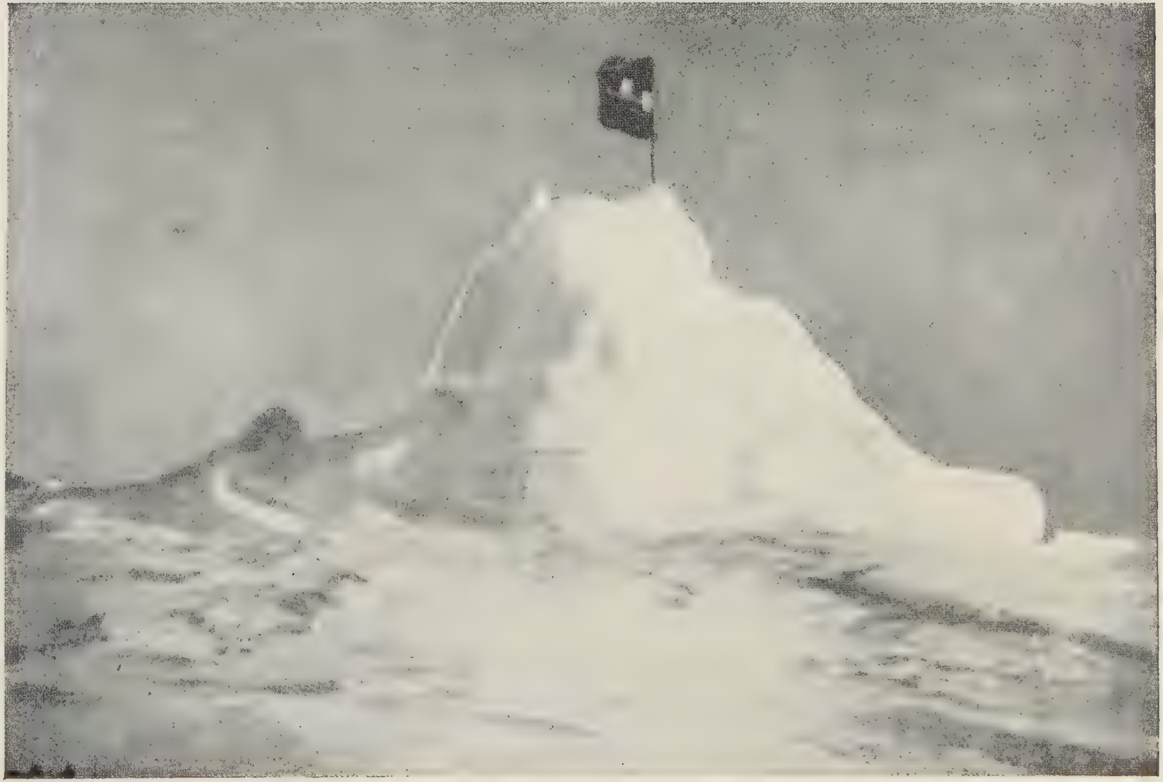
Concerning Greenland Peary had three ideas. He wanted to define the northern limits of that "land of desolation"; he wanted to cross the fearsome ice-cap that lay in the heart of its most northerly portion; and he wanted to learn how to reach the Pole. Any one of these undertakings might well have satisfied any person, but Peary always thought generously; in the end he succeeded in fulfilling each one of his aims.

His earliest journey to Greenland in 1886 had been by way of a trial trip, and with the winter of 1891 the real business was begun. The news of the coming of the strange white family having travelled among such Eskimos as lived in those parts, little parties of natives began to arrive to see the strangers for themselves. The Eskimos have always, within limits, been nomadic. Possessing practically nothing except their *kayaks*, their

R. E. Peary

PEARY IN ARCTIC OUTFIT

From "The North Pole," by Robert E. Peary, by permission of the Executors of Admiral Peary



PEARY'S FLAG AT THE NORTH POLE

From "The North Pole," by Robert E. Peary, by permission of the Executors of Admiral Peary tent skins, their sledges, dogs, harpoons, and a few primitive utensils, they can easily roam from place to place, erecting temporary homes either of skins or snow, according to the season of the year. And so, round Red Cliff House there gathered a small community of Eskimos, drawn thither largely by curiosity. Many of the women were employed by Peary to make outfits of fur for himself and his companions, and for long days women sat chewing the skins which they were afterward to sew. This practice makes the skins extremely soft and easy to work, but it is a slow and disgusting process and wears down the teeth so that they are often level with the gums while the women are still young.

Between 1891 and 1902 Peary made many magnificent sledge journeys to the interior of North-east Greenland, the most important of these being in 1892, 1893–95, and 1900.

AN ESKIMO WOMAN

From Stefansson's "The Friendly Arctic"

The first of these was made from Red Cliff House, and on this occasion Dr Cook was among those who accompanied Peary. The party, which included several Eskimos, was dressed in Eskimo fashion—with fur coats, fur trousers, fur boots, and socks with fur soles. They carried enough food to give every man a ration of 2½ lb. daily, and with sledges and twenty dogs they set off. After covering a toilsome distance of 130 miles the main body returned, Peary having decided not to risk more than his own life and that of one other in the most desperate part of the adventure. He had chosen a man named Astrup to accompany him, and the two were quite aware that they might never see their comrades again. They took with them thirteen of the dogs—those dumb creatures upon whom had been thrust unasked the *rôle* of explorers. Day after day Peary and Astrup forced themselves over a country hostile to man. By June they had reached a level of nearly 6000 feet above the sea, and presently the snow became so difficult that every article that was not absolutely necessary was thrown away to relieve the sledges.

SLEDGE UNDER SAIL
From Stefansson's "The Friendly Arctic"

By the end of June mountains were seen in the distance, black and enormous, signifying that the coast was near. From this point the two men bore sharply eastward, and on the first of July they emerged from the region of snow. Before them stretched a barren, rocky expanse, and across this the two companions plodded for four more days, till, reaching a cliff—fit guardian, in its grim 3500 feet, of the savage interior—they gazed upon water never before seen by man. As it was the Fourth of July, Peary fittingly named this "Independence Bay."

Summer was now at its height, and on a ledge sheltered from the wind danced bright flowers, hastened into brief. vivid life by the sun in a few days that were now as long as their predecessors of the early spring had been short. Says Peary, in his *Great White Journey*:

> It was impossible for us to believe that we were standing upon the northern shore of Greenland as we gazed from the summit of this bronze cliff, with the most brilliant sunshine all around us, with yellow poppies growing between the rocks at our feet, and a herd of musk-oxen in the valley behind us.

To these two men, exhausted with weeks of struggle among snow, a primrose was very much more than a "yellow primrose."

They stood, two men isolated from the rest of the world, with not another human being within 600 miles. And such a 600 miles! Pathless, snow-covered, frozen, for ever swept by wind, and for ever threatening the life of any human bold enough to set defiling foot upon its white loveliness.

By August 8, 1892, they were back at Red Cliff House. One of Peary's darling wishes had been realized: he had crossed Northern Greenland from west to east: he had passed over the great ice-cap.

After a short visit to the United States, where he lectured in order to raise funds, Peary returned to North-west Greenland in 1893, his winter camp this time being on the shores of Inglefield Gulf, where the explorers built a house and called it Anniversary Lodge. Here Mrs Peary remained anxiously while her husband went on journeys of investigation, and here their baby girl was born in September 1893. The first few months of this baby's life were quite unlike those of an ordinary English or American child. Wrapped in furs, and sheltered by a rough hut, built amid snowy desolation, she spent the first part of her life in darkness, at length broken joyously by the coming of the sun in spring.

Several strenuous journeys to the ice-cap were made during the spring of 1894, but the ferocity of the weather told heavily against the explorers. Not much could be done in the face of a storm such that after it had subsided the dogs were found frozen fast in the snow, "some by the legs, some by the tails."

In the spring of 1895 an immense new effort was made thoroughly to explore the heart of the ice-cap. With the elements fighting furiously against them as usual, the explorers forced their way inch by inch up the slopes of the great plateau, till they were 7670 feet above sea-level, in an atmosphere so rarefied that the men bled at the nose and there was fear lest the dogs should go mad. Rations ran out, and, disappointed of finding the wild game upon which they had counted, they were faced with the awful prospect of starving to death amid these barren heights. Dogs were killed and fed to dogs; and the men themselves ate this food, managing thus to sustain existence and drag themselves each day nearer home. At last one dog alone was left, and he was given a meal of sealskin boots and a strip of leather, while Peary and his companion ate their last four biscuits. But the Lodge was now near, and by and by two scarecrows calling themselves men and one gaunt skeleton of a dog tumbled into shelter. They were safe! But what memories were stored in their hearts! What pictures flitted through their minds! Only those who have suffered as greatly can understand all that the word 'home' means.

In April 1900 Peary was to realize the second of his ambitions by rounding the northerly part of Greenland and defining its most northerly limit, thus definitely proving it to be an island. The first part of this great expedition was begun from Cape Sabine on the east coast of Ellesmere Island early in December 1898, when the only part of the day that has any light is the four hours while the moon shows herself. The difficulties of progress were thus immensely increased, and possibly no one without Peary's intimate knowledge of that desolate land could have succeeded. Picture him, with his ever-faithful companion, Matt Henson, four Eskimos, and dogs and sledges, crossing the ice-bound Lady Franklin Bay, in Grant Land. "The moon had left us entirely now. . . . In complete darkness and over a chaos of broken and heaped-up ice, we stumbled and fell and groped for eighteen hours, till we climbed upon the ice-foot of the north side. Here a dog was killed for food." It seems almost a miracle that they finally returned in safety from this attempt, and Peary was so badly frost-bitten that seven of his toes had to be amputated.

From Fort Conger on Lady Franklin Bay the party, having established a cache there, returned to the *Windward*, the ship that had been given to the expedition by Alfred Harmsworth (Lord Northcliffe). She was anchored near Cape Hawk. In the spring of 1900 Peary felt that it would be safe to essay the second part of his undertaking and to try to round Greenland's north coast. This project, after much hardship, he succeeded in carrying through, and his second great ambition passed from dream into fact.

There now remained the Pole, toward the conquest of which Peary had steadfastly been working. As a beginner spends time over grammar in order that he may master a language he wishes to acquire, so did Peary believe that an intimate knowledge of Arctic Greenland would show him how to conquer the Pole.

From 1902 onward Peary made deliberate attempts to reach the Pole. From Cape Hecla in Grant Land in 1906 he fought his way up to latitude 87° 6′ N., thus out-stripping the Italian record of 1900, and placing the flag of America nearest the Pole.

He returned determined to try again, and on July 6, 1908, he left the United States in the *Roosevelt* on what he felt must be his final trip. Early in the following spring the expedition, planned with immense care, set off from Cape Columbia, on the north of Grant Land. From this extreme point started twenty-four men, with nineteen sledges and 133 dogs, arranged as four supporting detachments and one party which was to make the final dash. Peary's belief in the value of Eskimos and dogs was amply vindicated, and later he wrote in his diary: "It is doubtful if the North Pole would ever have been discovered with our present means and facilities but for the help of the faithful Eskimos; and it is an absolute certainty that it would still be undiscovered but for the Eskimo dog to furnish traction-power for our sledges, thus enabling us to carry supplies where nothing else could carry them."

At different points on the journey the supporting detachments were sent home, till, latitude 87° 48′ having been reached, Peary, Matt Henson, and two Eskimos went on alone. Captain 'Bob' Bartlett, the British skipper who had spent years with Peary in the Arctic, being in charge of the fourth party, carried the Union Jack almost to latitude 88° N.

Four days later—on April 6, 1909—having struggled magnificently with his companions against a biting wind, Peary had the well-earned and extreme pleasure of planting the United States flag at the North Pole. Latitude 90° N. had been reached. The last of his three great dreams had come true. And no doubt as he stood gazing at the flag so bright against the snow in imagination he went back to those other voyagers through the centuries who also had striven and suffered, but whose hopes had not known fulfilment. Yet not one was without his share in Peary's great triumph. For every big undertaking successfully carried through is inevitably the outcome of many strivings; and the final achievement is but the sum total of all the smaller, earlier accomplishments.

CHAPTER XXII

ACROSS THE POLE BY AIR

AFTER Peary's success Arctic exploration took a slightly different turn, for although, as Nansen had so emphatically stated, the object of explorers was to investigate the whole of the Arctic region rather than to touch one particular spot, the knowledge that the Pole had been reached made the popular mind imagine that all had now been achieved. And also, to some extent, the explorer himself found his zest slightly diminished, the field for exploration being widened into something general, rather than concentrated upon something particular. Many Arctic problems still remained unsolved, but the great popular sensation was over.

During his magnificent journey in 1909 Peary had taken many careful soundings of the ocean depths near to the Pole. Less than five miles from the Pole he had reported "1500 fathoms, no bottom," thus proving that round the Pole was a basin of very deep water, and so confirming Nansen's reports of great waters in the heart of the North Polar regions.

This information was of the highest importance, for the Arctic coast-line cannot properly be judged by its outline as it rises above the sea. Hidden beneath the water is a wide, projecting ledge of land, which runs out irregularly into the sea and forms a kind of shelf. As a result of this shelf, which, geologists tell us, is in all probability a foundered portion of the Northern continent, water apparently deep is sometimes found to be surprisingly shallow. Off Siberia, for instance, the shelf extends very far north, so that ships sail there in shallow seas, and the walrus, which digs its food out of the sand, is here found in large quantities. For the most part the shelf is fairly level, but in some places a whole series of dales and dells exists, so that beneath the water there is what may be termed a varied 'landscape.' And thus it becomes plain that the Arctic still holds many secrets well worth unravelling.

For all these reasons the years immediately following Peary's great achievement were devoted by Arctic explorers mainly to searching for new islands, to plumbing the depths of the waters, and to completing the map in such a way that there should be few question-marks left on it. In 1900 Sverdrup, as we have seen, discovered four important islands—Axel Heiberg, Ellef Ringnes Island, Amund Ringnes Land, and King Christian Island—and Stefansson in 1916 found Brock Island, Borden Island, and Meighen Island in the same Canadian archipelago. In 1913 a Russian expedition under the command of an explorer named Vilkitski found another important group off the coast of Siberia which they named "Nicholas II Land."

The further exploration of Greenland too was carried on, largely by the Danes. On one of these expeditions, in 1913, Dr Koch and his party ascended to a height of nearly 10,000 feet in the heart of that bitter country; in 1916 Koch, with Rasmussen and a few others, made another great journey to the north-west; and, with the inextinguishable courage of the adventure-seeker, in 1920 Rasmussen returned to the attack, with the object of exploring those northern districts discovered by Peary, and known as Peary Land.

In 1913 Stefansson, indomitable as the rest, had led an expedition, financed by the Canadian Government, to the north-west shores of Arctic Canada, and right up to 1918 he continued his splendid explorations.

Across the Pole by Air

During the years of the Great War Arctic exploration suffered a natural lull. But with the termination of the struggle there came an entirely new effort. Air service, perfected during those years of terrible conflict, had established itself as a means of covering long distances quickly. The ice, that age-old guardian of land and sea, was now to be ignored. The air should provide a path; so long as he stayed in the air an explorer could snap his fingers at ice. Fog and wind, however, remained grim adversaries. Ice, defeated below, showed itself capable of stretching long, menacing fingers into the air, as airships were presently to discover.

To fly above the Pole had long been the dazzling hope of airmen, but, in addition to the ever-prevalent fog, three great difficulties faced the aviator—the intense cold of high altitudes in the Arctic, the weight of the fuel to be carried, and the uneven nature of the surfaces where it might be necessary to land. But these difficulties, great though they might be, were not sufficient to hold back men well aware that every time they entrusted themselves to the air they must risk their lives. One more risk was, after all, only an incident in a career that involves daily dangers.

And so from 1923 onward a series of fine attempts were made to reach the Pole by air, and Spitsbergen became accepted as the best base from which to set out. This group of islands, for so many years known only to whalers, was the point from which Parry in 1827 made his memorable attempt to reach the Pole by sledge-boats. Since then it had furnished the jumping-off ground for many another enterprise, and so far from being a spot known only to whalers it had sprung into first-rate importance.

Here, in 1923, Hammer, a young American, made a survey of the northern islands. And from here in 1924 F. G. Binney and a pilot, of the Oxford University

Expedition flew above the ice-floes on the eastern shores, taking many valuable photographs. They carried with them ice-equipment, lest, being forced to descend, they should find themselves cut off from their base.

In September of this same year (1924) Amundsen, that hero of both Poles, who had for years been experimenting with a view to exploring the Arctic from the air, found unexpected and most welcome support for his scheme for a Polar flight. He was at the moment in America, lecturing to raise funds for his darling plan, and he had just calculated that at the present rate he would be 110 years old before he would be in a position to finance a new flight when "the telephone rang and a voice said: 'Are you Captain Amundsen?' . . . 'Yes, I am.' 'Well,' continued the voice, 'I am Lincoln Ellsworth.'" "And that," adds Amundsen, "was how I became acquainted with the man to whom I should later owe so very, very much." Thus supported, Amundsen pushed on with his plans successfully, and on April 9, 1925, an expedition under his command left Tromsö. It consisted of two ships, the *Hobby* and the *Farm*, which were to carry two seaplanes, N 24 and N 25, to Spitsbergen.

Soon after the start the *Hobby* became separated from the *Farm* in a snowstorm, but eventually, as a result of splendid seamanship, both vessels arrived in King's Bay.

Here the party encamped and set to work to prepare the seaplanes for the great adventure. The days that followed were busy, and differed little from one another, and by May 4 everything, as far as the seaplanes were concerned, was in order. But once again ice presented a difficulty. No suitable starting-place could be found: the winds were high, and the temperature as low as −23° C. In these circumstances the only safe course was to "wait and see."

On May 9 a few trial runs on the ice were made by N 25, and by May 18 the weather was such that the airmen held themselves in readiness to start any moment.

On May 20 Amundsen realized that the right moment had arrived, and the flight was fixed for 4 P.M. of that day. Meanwhile, the *Farm* and the *Hobby* were to patrol according to instructions, every precaution against accident having been taken. It was now time for N 25 to make her first great effort, and in a few words Amundsen describes those moments of anxiety and hope. "With a mighty pull the machine raised itself from the earth. We were in the air. The master-stroke was accomplished. It seemed to me after the breathless anxiety that I at last heard a light 'Ah!' which grew into a ringing shout of joy."

So far so good, but where was N 24? Time after time Amundsen, now well on his flight, turned back to see what had become of her. She might have been unable to rise: she might—— A hundred horrid possibilities shot through his mind. Then he continues: "Suddenly something blazed in the sun: it glittered like gold. It was the sun playing on N 24's wings. . . . Then the machine turned its nose again towards the north, and the two enormous birds started their flight together towards the 'Unknown.'"[1]

In the course of this hazardous enterprise N 24 and N 25 flew through unknown air above unknown sea in a solitude so profound that the noise of their engines seemed a sacrilege. Man pitting himself against space seems absurdly inadequate, and yet how magnificent he is! By his faith he removes mountains, and the peaks beneath him become as if they were not.

Their petrol-tanks being half empty, N 24 and N 25 were forced to descend in latitude 87° 44′ N. They had not reached the Pole, and they were stranded in a channel among ice-floes. Landing in itself had been a perilous adventure. In the descent N 24 was badly damaged, and presently from N 25 in her harbourage a few miles away flashed a signal that she also was in trouble, and instructing the crew of N 24 to bring their petrol and stores, in the hope that all could get away in one of the machines. Ellsworth (in command of N 24) and his two companions therefore packed up as much as they could carry and started off toward Amundsen. They found that to cross an ice-floe was less easy than they had imagined, and but for Ellsworth both Dietrichson and Omdal, his companions, would have been drowned *en route*.

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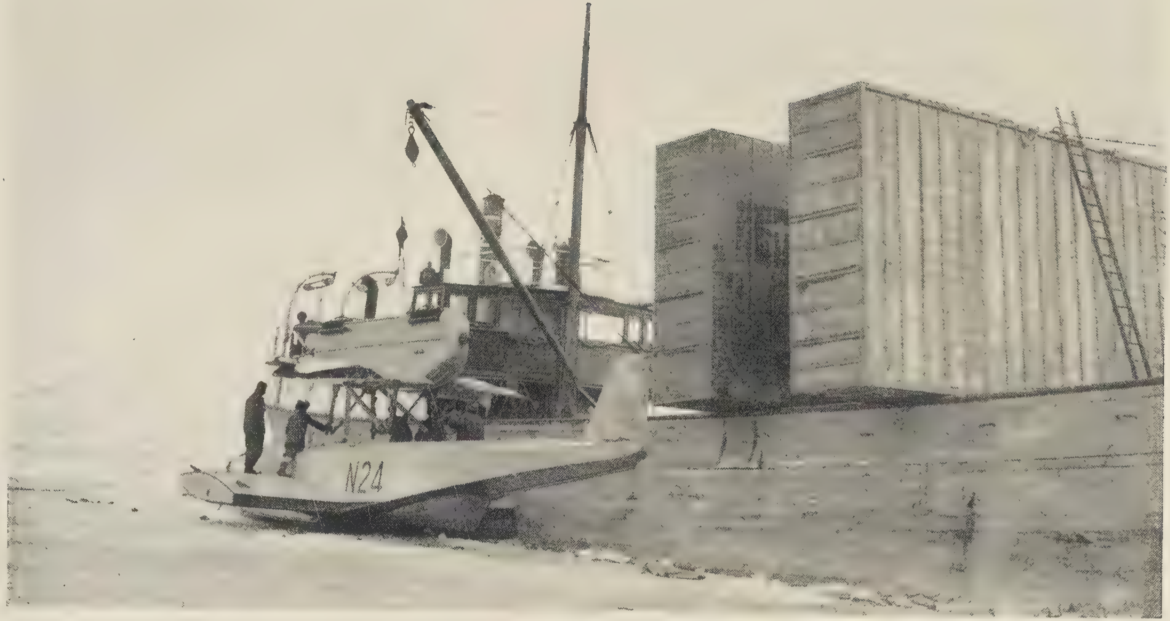
[1] *My Polar Flight.*

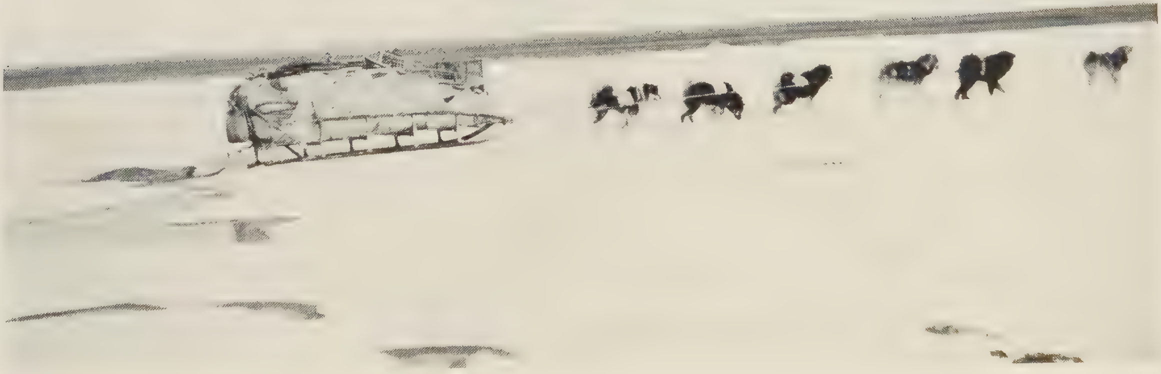
Arrived at N 25 their spirits rose. Six men could more easily keep cheerful than three, and the half-dozen now set to work to free N 25 from her prison. Firmly wedged between two floes that at the moment afforded her protection, the seaplane appeared to be impotent against the moment when 'packing' might begin, for a seaplane would be helpless amid ice which could crack a stout ship as if she were a nut. It was now May 26, and at first the task did not seem difficult. But as day after day passed, and as provisions grew less and less, without even a sign of seal or bear, the spirits of the six men began to waver. Would they ever escape from these regions? Should they still go on hacking away to free N 25, or should they begin a long, harrowing march over the floes to Greenland? Night and day the six in turn kept watch, looking eagerly for a floe large enough to afford them a rising-ground for N 25.

No relief came till June 5 when two searchers reported that half a mile away was a floe that would serve their purpose. But how could N 25 be got to it? "Next morning early," says Ellsworth (in his contribution to Amundsen's book, *My Polar Flight*), "we began the stupendous task of cutting a passage through an ice-wall



"N24" ON THE DERRICKS OF THE "HOBBY" AT KINGS' BAY

From Amundsen's "My Polar Flight," by permission of Gyldendal Norsk Forlag



ONE OF STEFANSSON'S SLEDGES

The level sea-ice is beginning to be eroded by rain and sun in the spring. A seal recently shot is being dragged behind the sledge.

From "My Life with the Eskimo," by Vilhjalmur Stefansson, by courtesy of the author and the American Museum of Natural History, New York twelve feet thick which separated floe No. 1 from floe No. 2, and then of bridging between the floes which were separated from one another by a fifteen-foot channel of water."

Working like Titans, by June 9 they succeeded in getting N 25 to the desired floe. The job now was to make a smooth run for the machine. For days they wrestled with the task of levelling the ice, urged on by the knowledge that food was running out and they were daily losing strength. June 15 had been marked as the crucial day. If N 25 did not rise then the company must abandon her and set out on foot for Greenland.

For four days they had been stamping down the snow in order to smooth it, and on the evening of the 14th they decided to make a try with the machine. Ellsworth graphically describes their effort:

> A speed of 100 kilometres [62 miles] was necessary for our plane to leave the ground. For four tries the best speed we can make is 40 kilometres. On our fifth try we make 60 kilometres. Riiser Larsen, pulling up at the edge of the floe, turns in his seat and says to me, as I jump from my place and stand on the ice: "I hope you are not disappointed, Ellsworth. The wind was against us. I think we'll do better next time."

Down on their hands and knees went the whole party, and with their sheath knives they smoothed off every particle of ice they could find; then, throwing away everything except bare necessities, in order to lighten the load, they prepared for a last attempt as soon as day should arrive. June 15 dawned, and in the night the wind had changed: it was now more favourable for a take-off. Feverishly they take their seats. It was, says Amundsen, "now or never." In the pilot's seat sat Riiser Larsen, behind him Amundsen and Dietrichson, in the petrol tank Omdal and Feucht, and in the mess Ellsworth. The floe beneath them is strewn with all sorts of things they have thrown away, many of them very valuable, but there are moments when a man's life may be in danger through the abundance of things which he possesses. N 24 is also left behind, the first aeroplane victim to the Poles. But N 25 is safe! She rises nobly, and like a bird she flies through the air, above the fog.

After flying for eight hours and thirty-five minutes, and having only half an hour's fuel left, they were compelled to descend in the sea, about a mile from an unknown coast. Thoroughly drenched but magnificently happy, they at last reached land, which they discovered to be North Cape, on one of the Spitsbergen islands, "where," says Amundsen significantly, "there was no need to look for a church wherein to praise God Almighty and offer up to Him our burning thanks."

While they were still endeavouring to locate their landing-place a little whaler came in sight. Frantically they hailed her, and, as Ellsworth puts it, in their anxiety not to let this chance escape them, they jumped into the plane and 'taxied' out to her. The little ship was only too willing to tow the gallant airmen, and in this fashion they arrived safely, some three days later, in King's Bay, and a marvellous achievement found a happy ending.

In 1926 Amundsen was again in the forefront, in the famous Amundsen-Ellsworth-Nobile Spitsbergen-Alaska Expedition. On this occasion he planned to make an attempt upon the Pole in an airship, hoping to be able to hover above it for a considerable time, so as to make a leisurely survey, and then proceed to Alaska. The airship, the *Norge*, was large enough to carry seventeen passengers, Amundsen, Ellsworth, and Colonel Nobile (an Italian) being the chief members of the expedition. The *Norge* was magnificently furnished with every device, including a wireless outfit capable of transmitting over a distance of 1000 miles; it left King's Bay, Spitsbergen, on May 11, 1926, flew to the Pole, circled it twice, and then flew on to Alaska, landing at Teller on the Bering Sea. In this wonderful journey the aviators covered 2700 miles in seventy-one hours. Their programme had been carried out perfectly. Two days before the *Norge* accomplished her wonderful journey a young American, who has since become world-famous, Commander Byrd, accompanied by Floyd Bennett, flew in a Fokker aeroplane, the *Josephine Ford,* to the Pole and back without landing.

Among the first to congratulate them upon their achievement was Amundsen, who also was at King's Bay, and about to start from there with the *Norge* for the Pole. Thus within a few days the Pole was twice reached by air —first by Byrd, who raced to the spot and back, and afterward by Amundsen in his longer and more searching flight. Byrd thus holds the honour of first reaching the Pole by air, but the *Norge* has the distinction of first exploring, from the air, beyond the Pole—an achievement which Byrd would be the first to applaud. In either case the achievement represented the aim in view upon setting out. Byrd did not plan a longer flight: he was content with a journey to the Pole and back. But the *Norge* had different aims, and these she carried out admirably. She hovered above the Pole for an hour and a half, at a height of 600 feet, and then flew on to Alaska, enduring for seventy-one hours such an intensity of cold that sleep was impossible, enduring, too, actual hardships from ice; for the snow froze on the rigging of the airship, and formed icicles of such bulk that when they dropped, and the propellers caught them, they were hurled through the covering of the airship with the force of bullets, causing leakages which seriously endangered the safety of the crew. And so, once again, ice proved itself an enemy of no mean power. Even in the air man was not entirely beyond its reach.

As a result of Amundsen, Ellsworth, and Nobile's long flight it was established beyond doubt that there is no large tract of land at the North Pole. Nansen's guesses had proved to be marvellously accurate. The experiences of both Peary and Amundsen confirmed his surmises. The North Pole was no longer a mysterious spot, peopled, as the Eskimos used to imagine, with powerful spirits. It was a geographical reality—a region entirely uninhabited and ice-covered; not land at all, but a basin of deep sea, frozen into immobility; a fitting fortress for Ice, that unconquerable giant, beaten perhaps on some smaller counts, but in the main triumphant and untouched, watching serenely the coming and going of man.

In 1928 Captain George Wilkins, an Australian explorer, flew from Alaska to Spitsbergen. Captain Wilkins, who had made several previous attempts by air, reaching on one occasion seventy miles farther north in the direction in which he was heading than any other explorer, was a member of Stefansson's 1913–17 expedition and of Shackleton's expeditions.

CHAPTER XXIII

ICE MEETS ITS MATCH: STEFANSSON

INTO this world of difficulty, at rare intervals, is born a man of such a temperament that for him obstacles simply do not exist. Of such is Vilhjalmur Stefansson, who not only sees the "frozen" Arctic in terms of friendliness and plenty, but—much more wonderful—is gradually making the rest of us see as he sees.

"There is no eternally frozen North, except where snow gathers on mountains because of their altitude," he asserts. And so splendid is his enthusiasm that we too catch it and follow after him, doubtfully at first, but with more and more confidence as he spreads before us proof after proof. His aim is nothing less than to put in the place of the Arctic as our ancestors have viewed it a region filled with healthy, industrious people, busy over occupations that will link them up with the great trade of the world. This point of view was warmly supported at the British Association Meeting in 1927. Dr Rudmose Brown, President of the Geography Section of the Association, and himself a well-known Polar traveller, referring to Stefansson's theories, boldly asserted that a time would come when the Arctic would be a centre of trade activity. All the evidence, he urged, pointed to such a probability, and, though a vision of the 'barren' Arctic as a land of flocks and herds may at the moment appear fantastic, visions have a way of coming true. Stranger things than this have happened in the world's history, and before this century closes "these wild dreams" may have come true.

Stefansson admits that when first he visited the Arctic he took with him all the old ideas about the perils and hardships he would have to endure. He was, of course, well fitted to make the experiment of facing cold, being accustomed to the rigorous climate of the Manitoba and North Dakota prairies. "When I first went North to spend the winter of 1906–7," he writes, "I was a good deal of a hero. . . . I discreetly feared all the terrors of the North but I feared the darkness most." How completely he changed his mind, and how instead of dreading the Arctic he came to love it, is vividly described in his immensely interesting book *The Friendly Arctic*. *Veni, vidi, vici*, very aptly describes his experience when he stepped within the Arctic circle, which for him may be described as indeed a 'magic' circle.

Stefansson's memorable Polar journey of 1906–7, when he investigated the Eskimos living round the delta of the Mackenzie River, was succeeded by another in 1908–12, under the auspices of the American Museum of Natural History and the Geological Survey of Canada. In this journey he pursued still further his researches into the habits and customs of the Eskimos, visiting several tribes who had never before seen a white man. This second expedition north in its turn was followed in 1913 by a journey even more significant, when he set out to explore the Arctic regions adjacent to Northern Canada, his intention being to attempt to investigate thoroughly the frozen reaches of the Beaufort Sea. The starting-point turned out to be Martin Point on the north coast of Alaska; the goal, the north-west corner of Banks Land. In between lay the Beaufort Sea, littered with ice-floes, an unexplored, forbidding, frozen waste. Across this region of floating ice Stefansson proposed to go, trusting to find food as he went along. From the ordinary man's standpoint no more reckless scheme could have been conceived. To cross hundreds of miles of floating ice, on foot, and without supplies of food! Where would food be found? And even supposing Stefansson was right in thinking that the sea teemed with seals, how would he get the seals? Every one was emphatic in ridiculing the man who could put forward such a scheme. But Stefansson had the courage that admits of no obstacle. "I am going," was his terse reply; and thus he brushed aside ocean experts, Polar explorers, whalers, and even the Eskimos, who one and all protested against his idea.

Having determined to go, his first need was financial support, and this he obtained from the Canadian Government, who put him, in 1913, in command of the Canadian Arctic Expedition. Thus began one of the most thrilling journeys in Arctic annals—a journey that ultimately may lead to the extensive colonization of the Arctic in which Stefansson so sincerely believes.

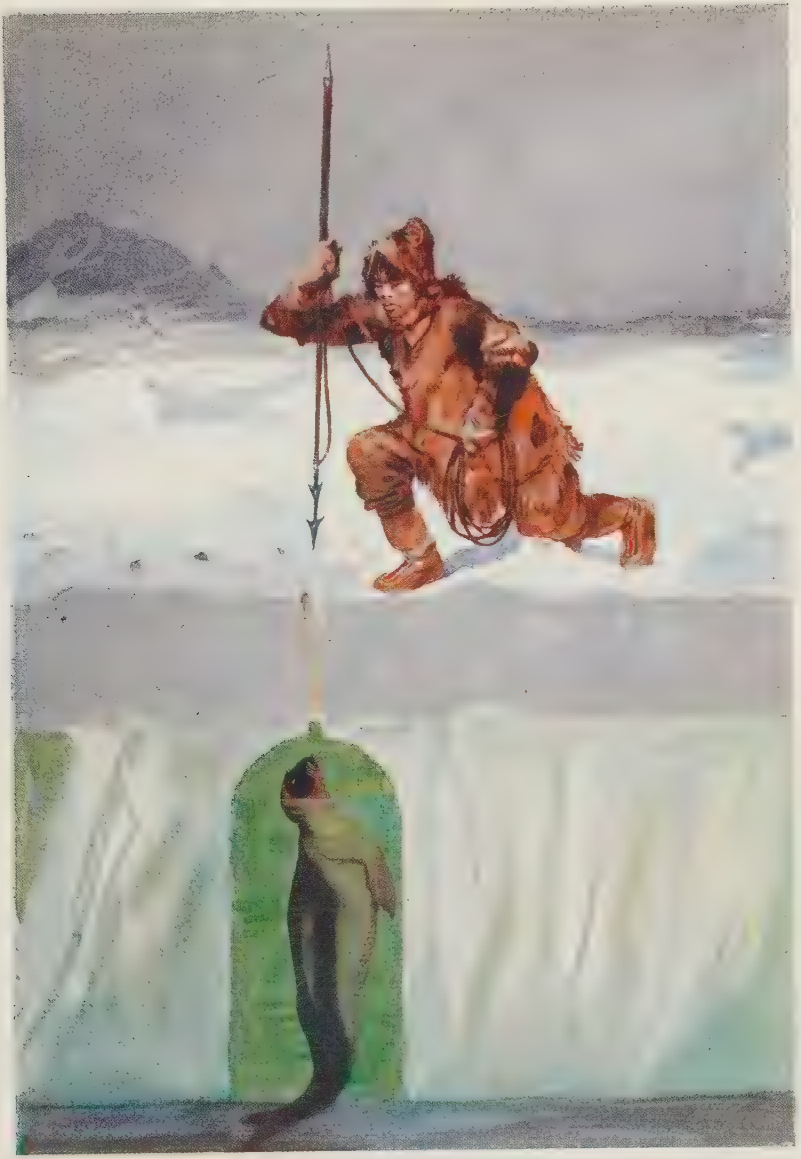
Late in July 1913 the expedition, consisting of three ships, the *Karluk*, the *Mary Sachs*, and the *Alaska* set sail. Stefansson was on the *Karluk*, commanded by the famous Captain "Bob" Bartlett. Everything promised well—in fact, Stefansson confessed that there seemed really no difficulty against which to contend. He knew the Arctic and loved it; he had many friends among the Eskimos; he adored adventure; he did not fear the "barren" wastes, because he did not find them barren; nor did the long grey stretches of ice and water depress him, because his eye had grown familiar with them, and familiarity, as we all know, takes away practically every terror. In Elizabethan days untravelled Englishmen feared mountains, and looked upon them as "horrid," or arousing horror. Then came a time when the poets saw the hills as things of beauty, and before long the very mountains that had caused terror now began to rouse admiration. So with Stefansson: he knew the Arctic, and so he was not afraid.

But difficulties soon presented themselves—as they have a way of doing. The *Karluk* stuck in ice almost before the journey was well begun, just beyond Cross Island. "On the 13th of August," says Stefansson, "we tied up to the ice, to move no more under our own power, and by the middle of September we seemed to have stopped moving at all. . . . I came to the opinion that we were likely not to move again before the next summer."

In these circumstances, a week later, Stefansson and five others went ashore for the purpose of looking for fresh food. (One of these five was the same George Wilkins, an Australian, who later became famous as an Arctic explorer in his own right.) A terrible night followed. Mist and wind hid the ship from view, and when the sky cleared there was no ship. She had vanished, leaving five men stranded! Thus began the memorable drift of the *Karluk*, which lasted till September 1914, when her crew were rescued from Wrangel Island by the *King and Winge* of Seattle. Thus, too, began that still more memorable journey by Stefansson, the first stage of which also ended in September 1914, when he and his two companions, Storker Storkersen and Ole Andreasen reached Cape Kellett on Banks Island.

But in between the day when Stefansson light-heartedly stepped ashore from the *Karluk* and the day when he met his friends at Cape Kellett were many anxious days, and many adventures of a most perilous kind. Here was he, parted from his ship, with five companions, ashore without food or equipment. What was the first thing to be done?

On one point Stefansson was firm: nothing should deter him from carrying out his original plan of crossing the Beaufort Sea. His first care was, therefore, to get the Canadian Government to approve of his going on, in spite of the disaster to the *Karluk*, and he, therefore, submitted to them his proposal. To this came back the reply, "Your decision to pursue expedition as per original plan is approved."



ESKIMO ABOUT TO SPEAR A SEAL THROUGH ITS BREATHING-HOLE

Henry Evison

This document from the Canadian Government gave Stefansson his authority, and, acting upon this, in spite of incredible opposition, not only from the newspapers at home, but from actual friends on the spot, he at last set off on March 22, 1914, from Martin Point, travelling north, in the hope of reaching the north-west corner of Banks Island. To this neighbourhood the *North Star*, a small ship he had purchased from a trader partly to replace the lost *Karluk*, was meanwhile to proceed, and on arriving at Norway Island (latitude $73\frac{3}{4}$° N. approx.) she was to look for a 'beacon,' or heap of stones, under which would be a message from the intrepid three stating their probable whereabouts. Trusting to the successful carrying out of these instructions, the expedition started. At latitude 70° 13′ N. the support party went back, leaving three men only, Stefansson, Storker Storkersen, and Ole Andreasen, to continue the perilous adventure.

Imagine three men and six dogs, with food for only forty days, setting out to travel on foot across a sea of floating ice to an unexplored, uninhabited goal, many hundreds of miles distant! Think of the isolation, the terrors by day, and the horrors by night, the anxieties, the nervous strain, the fearful uncertainty of any return; and then put in the balance the courage and faith necessary to make such a journey possible, and you will have some idea of the character of these three men.

Writes Stefansson in *The Friendly Arctic*:

> We were making a new adventure in Polar exploration, not only in intending to live by hunting when the food was gone, but also in gourmandizing while yet we had food. We were travelling over ice that floated over an unknown ocean, away from all known lands, and without any intention of turning back soon. I think I have read nearly all North Polar literature and I never read of any party that under such circumstances would not have tightened their belts and saved every scrap of food.

Here speaks Stefansson the revolutionary! Not only is he out to accomplish a journey as yet unattempted, but he will do it by methods that to the cautious seem crazy. But if ever wisdom has been justified of her children it is in Stefansson. Out of all his difficulties he has escaped as if charmed. And yet, upon scrutiny, it must be granted that what has really enabled him to rise above every difficulty is his consummate hunting, backed by his shrewd calculation and his perfect common sense.

The journey throughout was punctuated with perils. By April 26 they were 200 miles from Alaska over an unexplored ocean a mile deep, with food for two weeks and no sight of game. In such circumstances the prudent would have attempted a return to Alaska, but Stefansson was so certain of finding animals for food, if he were to persevere that he steadfastly kept toward Banks Land. The floes were drifting gently west, but they were so close that, at first, the three could pass from one floe to another and thus outpace in an easterly direction the westerly drift. But May 24 found them marooned on an island of ice, some four miles square, with wide lanes of water all round. The food brought from the ships had been eaten long before, and they had by now been living on seal-meat for weeks. But on the floating ice island they did not have to live on seals alone, for a bear came to steal their accumulated seal-meat from them and was killed. In the next few days four other bears appeared and were severally shot, and the larder was more than full. On June 5 they escaped from their island, and on June 23 they thought they saw land, which eventually proved to be Norway Island, the rendezvous where they were to be picked up by the *North Star*. "Our first sleep on the land floe," he writes in *The Friendly Arctic*, "had a comfort and security about it that we had not known for over ninety days. . . . The passive security of the land-fast ice was a feather bed and down pillow which brought the first real relaxed sleep for three months."

Norway Island abundantly fulfilled Stefansson's expectations. A first general survey through glasses showed him animals and game in plenty on a previously unknown island between Norway Island and the mainland of Banks. Closer investigation proved it to be "about twice the size of Norway and much more fertile." Eskimos have lived here in other ages; and in years to come Europeans may very well be found encamped there. With aeroplanes to minimize distance there is no quarter of the globe that is now beyond reach; and man has generally been able to acclimatize himself to the conditions necessary for living in any region that is within his reach.

The summer of 1914 was spent in busy investigation of Banks Land. June and July passed, and there was still no sign of the *North Star*. Toward the end of August they began to despair of seeing the ship arrive, and their thoughts turned to plans for wintering there. Before determining on where in Banks Land to winter Stefansson's party decided to make a trip a hundred miles south to see if the *North Star* might not have been able to make her way to the south end of the island. Near Cape Kellett, at the south-west corner, they found, not the *North Star*, but the *Mary Sachs*. Stefansson, who was travelling a mile or two ahead of the others, approached without causing any excitement, being taken in the distance by the crew of the *Mary Sachs* for one of their number. Then suddenly one of them shouted: "Stefansson is alive! He's here," and a great clamour arose. Every one had long ago given up Stefansson and his companions as dead, and their reappearance, neither jaded nor worn with hunger, seemed to the others as nothing less than a miracle.

"There were," says Wilkins, who was in command of the

Mary Sachs, "many reasons why Stefansson could not be alive."

And here he was, not only alive but exuberant! No wonder the crew of the *Mary Sachs* looked upon Stefansson, Storkersen, and Andreasen as men risen from the grave. In a magazine article in which he tried to sum up his feelings of amazement Wilkins later wrote:

> So this was the end of the enterprise which for months I had heard condemned or deplored by Eskimos and whalers and the men of Arctic experience in our expedition as "one crazy and two deluded men going north over the sea ice to commit suicide."

Stefansson, reviewing what had been accomplished between the departure from Martin Point and the arrival at Norway Island, wrote in his diary:

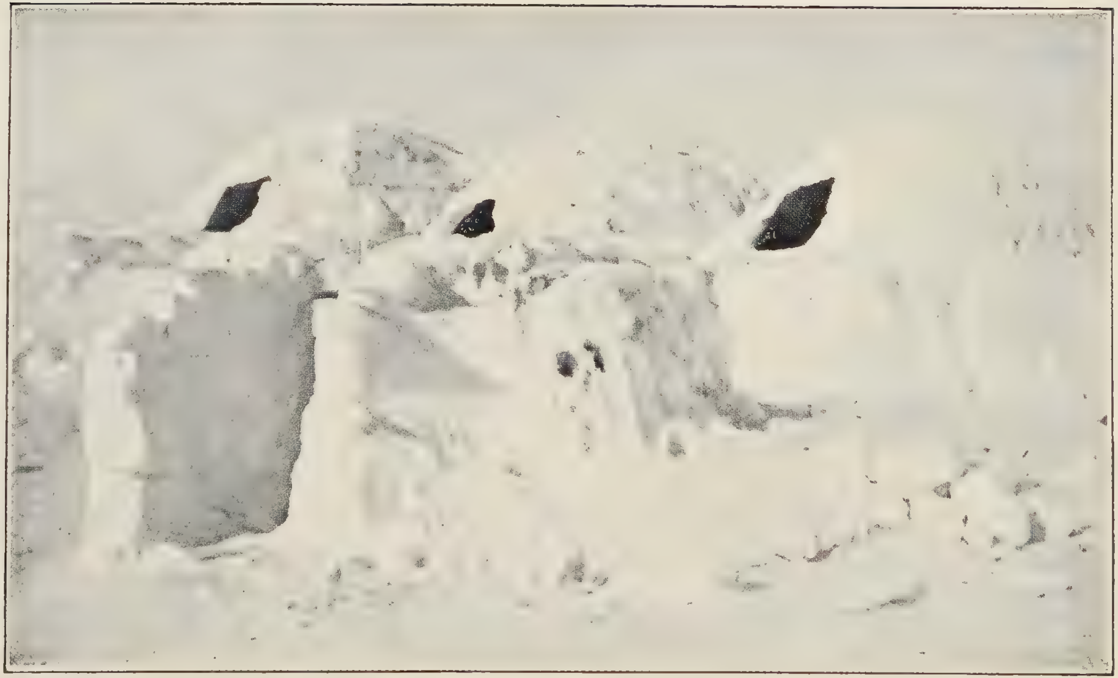
> We have carried a line of soundings of over 4500 feet through four degrees of latitude and nineteen degrees of longitude, most of it unexplored and all of it unsounded ocean. We have determined the "continental shelf" off Alaska and off Banks Island, and have learnt something of the currents of the Beaufort Sea. Most of what we have learned is contrary to what men 'knew' before. This summer we may be able to do some further useful work in geography, geology, and archæology in Banks Island.

In those few modest words he sums up results that would satisfy most men for a lifetime. But to Stefansson there is always "so much to do, So little done," and he wastes no time in embroidering the accounts of his achievements. So now from the arduous crossing of the Beaufort Sea he plunged into a laborious investigation of Banks Land. This occupied the summer of 1914, by the end of which he could write with authority of that region. He found it "typical prairie land," and "an ideal country for Polar oxen [*Ovibos*], which are grass eaters." Cattle of this kind had apparently once existed there, but had been exterminated by roving Eskimos. Some caribou he

STEFANSSON AND A COMPANION BUILDING A SNOW-HOUSE

THE LAST BLOCK BUT ONE

From "With Stefansson in the Arctic," by Harold Noice



THREE-ROOMED ESKIMO DWELLING, CORONATION GULF

From " My Life with the Eskimo," by Vilhjalmur Stefansson (New York: The Macmillan Company) found, and geese in thousands. But where Polar cattle once have grazed other herds may flourish; and if Stefansson's hopes come true this Arctic prairie may yet again teem with animal life.

Stefansson made several trips into the interior, which he found beautiful and fertile, with traces of an earlier occupation by Eskimos. The more he saw of Banks Land the more he liked it. "Since I began to know the North," he says, "its beauty, freedom and friendliness have continually grown upon me." In a very real sense he has identified himself so closely with it that between him and the country there has sprung up a kinship that is almost human. To a lover the beloved is always beautiful. The very cottager watering his garden sees in it a charm hidden from the passer-by. And so Stefansson, having fallen in love with the Arctic, sees in it all sorts of hidden allurements.

"I never thought of that before!" exclaims the ordinary man. That is why Stefansson's enthusiasm is so valuable. He is skilled in the unusual art of 'revealing' things to others.

Among the news brought by the *Mary Sachs* was the disturbing information that the *Karluk* had been wrecked off Wrangel Island, and the resources of the expedition were thus far beyond reach. "But," comments Stefansson characteristically, "it was up to us to make good in spite of that."

This he proceeded to do. The winter of 1914–15 was spent with the crew of the *Mary Sachs* in preparing for a great spring expedition. Early in 1915 Stefansson and three others thoroughly investigated the sea west of Prince Patrick Island and discovered a new land to the north of this island. On the road to these discoveries they followed up the tracks left by M'Clintock, and actually unearthed a cylinder containing a message left behind by that great explorer in 1853 during his search for Franklin. Stefansson, reflecting upon the brave lives lost in that memorable epoch, commented sadly that if only those forerunners of his had understood, as he did, how to pluck from the Arctic the food that was there many tragedies would never have happened.

Up the west coast of Prince Patrick Island, north to the new land they found, then back down the west coast of Melville Island, across M'Clure Strait from Cape Russell to Mercy Bay, and then down through the interior of Banks Land, went Stefansson and his three comrades, reaching Cape Kellett on August 9, 1915, after an absence of five months, during the latter half of which time they had again lived by hunting. Two days later a ship put in, the *Polar Bear*, and the Stefansson party for the first time heard of the Great War. Their surprise at hearing the news was equalled by the astonishment of the crew of the *Polar Bear* at seeing men who, they believed, had long since perished. The *Polar Bear* was for sale, and her crew were willing to be hired. So Stefansson bought her, and put her into winter quarters (1915–16) on Victoria Island. During the following summer (1916) the new land discovered in 1915 was explored, and much new territory in the neighbourhood of Axel Heiberg Island was discovered and investigated. These are now called the islands of Borden, Brock, Lougheed, and Meighen.

The discovery of new land must always be one of the most thrilling events in any man's life. Stefansson himself, though he has discovered so much new territory, confesses that each time the experience fills him with ecstasy. "I don't pretend," he says, "to be used to it, or past the thrills that go with it."

Such a discovery was Meighen Island, first sighted by Karsten Andersen, a member of the Stefansson party, on June 15, 1916. The tip of this island marks the most northerly point made by Stefansson in that season. From here he turned back, leaving behind a record of his proposed itinerary, and ending with the significant words: "We shall probably winter near Cape Murray [1] to prepare a base for the exploratory work of the Expedition to the north and west of that point in 1917." Though so much had been done, Stefansson was eager to do still more! And in 1917 he faithfully carried out his intention, making a journey over floating ice to latitude 80° 3′ N., longitude 112° W. The most casual glance at the maps indicating these marvellous journeys is enough to make the ordinary man dumb with astonishment, till, swelling with pride at the thought of what a human being *can* accomplish, he is forced into spontaneous applause.

It was during the expedition of 1917 that Stefansson deliberately searched round Cape John Russell in the hope of discovering there some record left by M'Clure. Almost by accident, as it turned out, he stumbled across a brass cylinder lying on the open ground about three miles south of Knight Harbour at the very north-east corner of Banks Land. Inside this battered tube lay a roll of paper, wet and discoloured, but legible, which opened thus:

> This Notice was deposited by a Travelling Party from Her Britannic Majesty's Discovery Ship *Investigator* who were in Search of the Expedition under Sir John Franklin which up to this date has not been heard of.

At the end of the message was the signature of M'Clure, partly illegible but undoubtedly his, and the date—April 21, 1851.

Leaving a copy of the original in a cylinder under a heap of stones on the site where the document had been found, Stefansson added the precious M'Clure letter to his other trophies, and bore it with him on his journey back to the camp at Cape Kellett.

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[1] On the west coast of Brock Island.

He arrived there to find that, for reasons which are still little understood, the *Mary Sachs* had been destroyed by Captain Gonzales, then in charge, and that he himself had set sail in the *Polar Bear*. This meant that the Stefansson party was left without any vessel to carry them home. Stefansson's feelings on this discovery were intense! "Truly," he writes in *The Friendly Arctic*, "the first and strongest feeling was wonder that these picturesque doings could have happened outside the covers of a book for boys."

Fortunately, however, another ship, the *Challenge*, put in on August 26. Stefansson, acting rapidly as usual, at once bought her, and within twenty-four hours all were aboard and going west. Next day there was a heavy fog, and when it lifted, there, but a mile or two away, was the *Polar Bear*! Signals were exchanged, the two vessels came alongside, and eventually Stefansson himself took over the command of the *Polar Bear*, and both ships proceeded to Cape Bathurst, where Captain Gonzales left the expedition.

The intention now was to push off to the Pacific, but once again Fate stepped in, and the *Polar Bear* struck a sandbank in a harbour at the east end of Barter Island. This was undoubtedly a misfortune, but Stefansson, with his unquenchable zest, saw in it an opportunity for carrying out a plan that had long enticed him—to go with a sledge-party several hundred miles north from Alaska, camp on a good solid floe, and drift with it one or more years, living the while by hunting. Stefansson calculated that such a drift would bring them in a year to a point north or north-west of Wrangel Island (where the *Karluk* had come to grief). Meanwhile the rest of the crew were to take the *Polar Bear* back to civilization during the summer of 1918. But again Fate stepped in. A most serious illness laid Stefansson low, and for three months his life was in danger. Then once more his magnificent spirit pulled him through, with the happy result that he was able to reach New York "in time to join there in the true joy of the False Armistice."

Thus ended one of the most romantic as well as one of the most important expeditions ever undertaken. General Greely, summing up Stefansson's accomplishments during the years of this expedition (1913–18), says:

> From the unknown areas of the Arctic land and sea he [Stefansson] has withdrawn areas amounting to approximately 100,000 square miles. These discoveries comprise about 65,000 square miles of Beaufort Sea to the north of the Mackenzie basin, 10,000 square miles of the Arctic Ocean west of Prince Patrick Island, over 3000 square miles along the north-east coast of Victoria Island, and over 15,000 square miles of land and sea to the north-east of Prince Patrick's Island. In the last-named region three large and other small islands were discovered between latitude 73° and 80·2° N. and between longitude 98° W. and 115° W. These new Islands unquestionably fill in the last gap in the hitherto unknown seaward limits of the great Arctic archipelago to the north of the continent of America.

Such a record is stupendous, and yet this does not by any means represent all that Stefansson has done. Incidentally he has studied the Eskimos till he is, with Rasmussen, one of the two explorers who have mastered their difficult language. He and Rasmussen know their ways, their dialects, their habits, their capacities, their likes and their dislikes, better than any other men alive. He has built snow-huts; he has lived in snow-huts; he knows all the Eskimo hunting and fishing tricks; he has lived as they do, eating their food and wearing their dress.

So, too, wherever he has gone he has observed closely both plant life and animal life, and he has seen with such new eyes that he has been able to present the world with an entirely new picture of the Arctic. He might, perhaps, be styled the Futurist of the North. It may take a good many years yet before the pictures he presents are acceptable to the general public, but pioneers must always bide their time. Their minds run on ahead of their generation, so that very rarely do they live to see the full results of their inspiration. So it is with Stefansson: his Arctic that is "friendly" and "fruitful" will not possess men's minds for years to come, even if it be as he sees it.

In presenting this new picture of the Arctic Stefansson boldly challenges the time-worn conception of the Polar regions as a dreary waste of frozen land surrounded by frozen sea. Modern seamanship has to a large extent overcome the difficulties of navigating among ice, and the land-investigation that has become possible through the use of sledges, the discovery of the importance of dogs as a means of transport, and the adoption of Eskimo methods of hunting and fishing have given us an entirely new conception. On any high plateau or mountain there is perpetual ice, but, apart from those in Greenland, there are few mountains in the Arctic. In the long, dark winter the ground is frozen hard, and there is snow; the conditions are then in every sense rigorous. But there is no 'perpetual' ice on those low-lying places.

This knowledge, so strenuously proclaimed by Stefansson, is now becoming general. The old picture is fading, and Stefansson is painting in another—with colours that seem likely to endure. And so the old fears vanish: the terrors of ice begin to slip away. The world goes on. Man can never hope actually to control the forces of nature, which are an expression of a Mind immeasurably above his own, but by co-operating with them, and adapting himself to them, he may arrive at a stage in which he may be said to have 'banished' them. And this, in regard to ice, is Stefansson's amazing achievement.

PART II

THE ANTARCTIC

If it be God's will that our mortal being shall now take an end, I rather desire that it may be in proceeding than in returning.

John Davis, on his fourth voyage, 1591

There is nothing strictly immortal, but immortality.

Sir Thomas Browne, Urn Burial

There were men like that. You could never tell where they were. They were only the crowd. There was nothing to distinguish them. They had no names. They were nobodies. But when they were wanted, there they were ; and when they had finished their task they disappeared, leaving no sign, except in the heart. Without the certainty of that artless and profitless fidelity of simple souls the great ocean would be as silly as the welter of doom undesigned.

H. M. Tomlinson, Gallions Reach

CHAPTER XXIV

CAPTAIN COOK VENTURES INTO THE ANTARCTIC

IN the early days practically nothing was known of the great Antarctic region. It was vaguely believed that in the far south lay an immense stretch of land, part of which at any rate was luxuriant and inhabited. When Magellan in 1520 rounded Cape Horn by way of the Straits of Magellan and thus discovered Tierra del Fuego it was imagined that Tierra del Fuego was only part of a huge archipelago, or perhaps even part of the unknown continent itself.

But when Magellan emerged into what he named the Pacific Ocean he was overwhelmed by the sight of the vast stretch of water around him, and it very quickly became evident that there was no large tract of land in the immediate vicinity. And so, although there continued to be vague tales of a great still-undiscovered continent in the far south, no strenuous efforts to find such a country were made for many a day after the death of Magellan. The exploring spirit which had tried its wings in the sixteenth century folded them again in the following century, and seemed unwilling for further flight.

But toward the end of the eighteenth century there came a new stirring; adventure was pluming itself in preparation for a new and glorious effort. This growth of enthusiasm for exploration was but a phase in a great general awakening. Thought, having accumulated fresh energy, drove men down many new ways. In poetry, in prose, in science, and in art there were new and wonderful developments. It was a new birth, an 'age of wonder.'

And in the general quickening came a great impulse to explore to the ends of the earth. And so we find Captain Cook, that superb navigator, supported by the government of his country, setting off to explore unknown seas at a time when new political faiths were trembling into birth, and when the great school of Romantic poets was to bring about a radical change in man's attitude toward nature. "Beauty is truth, truth beauty," sang Keats in a later day, thus joining in one great fellowship both artists and men of action.

Cook, setting off in 1772, went expressly with the idea of finding out the truth about the regions round the South Pole, still spoken of vaguely as "Terra Australis Incognita."

Australia (known at that time as 'New Holland') was itself once believed to be part of this great shadowy continent, but Cook's earlier voyage (1768–1771), when he circumnavigated New Zealand, had definitely proved that New Holland did not form part of some still larger expanse of land. And the general conception as to what might lie south of those stormy latitudes known as the "roaring forties" was now a matter of much greater speculation, though the popular mind clung to an idea from which it was loth to part. When at last Cook did return he brought with him information that was beyond question. He had pushed back the boundaries of the South Polar Continent almost to their real position. He returned nevertheless convinced, from dredged material and from other evidence than the actual sight of land, that a great continent really had its existence around the Pole.

Captain Cook took with him two small ships, the *Resolution* and the *Adventure,* and, in addition to the crews, he took men interested in science and natural history, so that every kind of observation might be made. The great Dr Johnson himself took an interest in the expedition, and, upon being asked by Boswell, "Had you not some desire to go upon this expedition, Sir?" Johnson answered: "Why, yes, but I soon laid it aside, Sir, there is very little of intellectual in the course. Besides, I see but at a small distance. So it was not worth my while to go to see birds fly, which I should not have seen fly; and fishes swim, which I should not have seen swim."

In obedience to his instructions Cook steered steadily south, and on January 17, 1773, he crossed the Antarctic Circle, thus sailing where man had never before ventured.

Long before this he had encountered ice, for, although latitude 66½° S. is taken as the border line of the Antarctic Circle, as Dr Bruce remarks in his vivid little book *Polar Exploration*, Polar conditions are met with long before the actual Antarctic Circle is reached. "For this, and other reasons," he observes, "I prefer to define the Antarctic Regions as being bounded by the average limits of floating ice."

And thus a ship, having successfully held on its way through the "roaring forties," must be prepared, before reaching latitude 60°, to do battle with icebergs of enormous size. These wonderful hills of ice, which have often been compared to Greek temples, rise, sublime and dazzling, into an air of incomparable purity. Man himself seems an intruder, and his aims unimportant and transitory in the presence of these expressions of nature's everlasting grandeur. Even to-day, when the Polar regions have been traversed by men along many routes, these giant icebergs retain their supremacy. Lieutenant-Commander Zeusler, of the United States Coast-guard, writing in *The National Geographic Magazine*, says of an iceberg in the North Atlantic: "We decided to try to dig a hole with four charges placed on a smooth water-polished shelf forty feet wide terminating in a cliff 200 feet high. . . .

But the explosion only served to paint a black smudge 100 feet wide, on the whole height of the ice-cliff." Then came a great storm, and the writer adds later: "The storm has done far more damage than man's mines. . . . The grave is opening for No. 14."

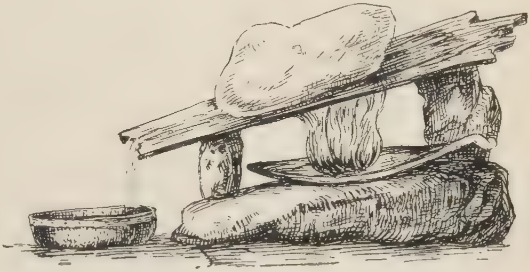
If, therefore, ice 200 feet high defied attack by explosives, we can imagine how terrifying it must have been to men who for the first time in history sailed within those Antarctic regions to meet icebergs, not a fraction of a mile in length as in the Arctic, but extending many miles square, the greatest recorded length of a berg in these regions being no less than a hundred miles.

A MASSIVE BERG WITH RAMPARTS

One great boon that ice confers upon explorers is sometimes forgotten; it provides an unlimited quantity of very good drinking water. Even frozen sea-water becomes quite fresh after a time. "Autumn ice," says Stefansson, "is bitter with brine, but during the winter the brine loses its flavour, and by the spring that same ice when melted over a blubber lamp produces water that is sweet and pure," and Cook refers to the melting of ice as, "The most expeditious method of watering I have ever met with," and there is no doubt that to this discovery he owed much of the health of his crews.

In the Arctic it is not uncommon to meet with pools of fresh water, sometimes large enough to afford sailing for a small boat. This fresh water has been caused by the melting of the surface layers of snow and ice, which thaw in the summer, to freeze again as soon as the warm weather ends.

Dr Bruce, one of the most careful and accurate of observers, referring to his experiences in the *Scotia*, which was icebound for many weeks in the Antarctic, observes: "During the whole of this time we used sea ice for drinking, cooking and washing, and fresh water was obtained from it with not the slightest taste of salt."



SNOW-MELTER

From Kane's "Arctic Explorations."

So that, whatever the Polar traveller may or may not find, at least there will usually be "water, water everywhere" at his command.

Having crossed the Antarctic Circle in January 1773 (summer-time in those latitudes), Cook decided that the conditions and surroundings made it unwise to risk staying there in colder weather. He therefore withdrew for a time, and continued his wide, sweeping survey in the direction of New Zealand. In December 1773 he returned to the Antarctic Circle to find the ice so difficult that he had again to retire for a few weeks. But in the next month—January 1774—he came back again, and this time he succeeded in forcing his way as far south as 71° 10′.

From here, being a man who was capable of making a wise decision, he determined to return home. As far as his eye could range he saw nothing but ice-fields. There was no sign of vegetation, no animal life; the cliffs were smooth and inaccessible; and, in any case, a landing could apparently afford no benefit. He records:

> I will not say it was impossible anywhere to get farther to the south; but the attempting it would have been a dangerous and rash enterprise, and what I believe no man in my situation would have thought of. I, who had ambition not only to go farther than anyone had been before, but as far as it was possible for man to go, was not sorry at meeting with this interruption [of solid ice]. Since therefore, we could not proceed one inch farther to the south, no other reason need be assigned for my tacking and standing to the north.

Later he records the impression left on his mind by those southern snows, which is memorable not only in itself but as the very first account of a region never before visited by man.

> Thick fogs, snowstorms, intense cold, and every other thing that can render navigation dangerous must be encountered; and these difficulties are greatly heightened by the inexpressibly horrid aspect of the country; a country doomed by nature never once to feel the warmth of the sun's rays, but to lie buried in everlasting snow and ice.

And so, having reached 71° 10′ S., and having seen sights never before seen by man, Cook's vessels laboriously sailed out of the Antarctic Circle, the ice-strewn seas of which were now to sink back into a repose that would not be broken for more than forty years.

By the end of July 1775 Cook's expedition was back in England, after an absence of rather more than three years. In this long time only four men out of a company of 191 had died, and of these only one had succumbed to disease. Captain Cook had succeeded in establishing himself not only as a superb navigator, but as a man of the keenest perception, as anxious to understand the laws of good health as he was determined to master the laws of good seamanship.

Other voyagers followed Cook in the South Polar region, but to Cook belongs the glory of being the first to adventure there. He established conclusively that the fabled southern continent of warmth and plenty had no existence. The South Pole lay separated from man by enormous waters, which, long before reaching the Antarctic Circle, were full of ice, and hard to navigate. Beneath those great ice-cliffs there no doubt lay land, but of what use was land that wore as a breast-plate half a mile of ice? And Cook was justified in thinking that no human beings could inhabit a country in which flourished neither tree, nor herb, nor any kind of root. Compared with these conditions, the North Pole, with the three great continents of America, Europe, and Asia reaching up so closely that they appear to be trying to coax the ice into friendliness, appears much more likely to afford livelihood for man. On the outer shores live Eskimos, and right up in the most ice-bound places are musk-oxen and hares, but between the inhabited parts of the globe and the South Pole lies an enormous waste of sea, making a chain of friendly trade depots impossible, and greatly increasing the risks of the explorer. It may be that in years to come the Antarctic will have as an industry penguin-farming, but such developments are bound to be very slow.

Human beings instinctively crave the society of their kind. For this reason, if for no other, traders will look north before south. In the Arctic, even as far north as Smith Sound, there are Eskimos living continuously, and displaying some kind of civilization. But the traveller marooned amid the far Antarctic wastes would find very little with which to sustain life. Land mammals there are none; roots there are none. Birds there are in plenty; penguins abound. So, too, do seals and dolphins. But, having pushed into the interior, beyond the range of penguins and seals, the lonely traveller, left unaided, would certainly perish. On the other hand, in the North there is always a chance of game. Peary on his way home in 1906, after reaching latitude 87° 6′ N., was on the edge of starvation when suddenly he saw some musk-oxen feeding far north of their usual boundaries. The flesh of these animals preserved the lives of Peary and his party. Such a miraculous banquet could never be the portion of men starving in the far Antarctic. Once beyond the range of seals and penguins there would be no food save what they could themselves transport. Captain Cook, though he never actually set foot on the South Polar continent, guessed very shrewdly as to its characteristics, and, having ruminated over all he had seen and done on his voyage, he concluded thus:

> Had we found out a continent there, we might have been better enabled to gratify curiosity: but we hope our not having found it, after all our persevering researches, will leave less room for future speculation about unknown worlds remaining to be explored. But . . . our having discovered the possibility of preserving health amongst a numerous ship's company . . . will make this voyage remarkable in the opinion of every benevolent person, when the disputes about a southern continent shall have ceased to engage the attention and to divide the judgment of philosophers.

And so Captain Cook concludes the narrative of his remarkable achievement with the fine simplicity that all through the ages has been the hall-mark of the genuine adventurer.

CHAPTER XXV

COOK'S FIRST SUCCESSORS

AS we have seen, the wide range of Captain Cook's Pacific voyage had conclusively proved that in southern latitudes was a much greater extent of water and a much smaller extent of land than had been popularly imagined. Any large stretch of land must at least lie within the boundaries of the Antarctic Circle, outside which stretched a vast ocean of immense depth. In that fearful abyss known as the Mindanao Deep, north-east of the Philippine island of that name, soundings have revealed a depth exceeding thirty-two thousand feet, and other depths ranging between twenty and thirty thousand feet have been plumbed elsewhere. Thirty thousand feet of water! The mind travelling slowly through these deeps is filled anew with wonder at the marvels of the world. The sea and all that in it is—how magnificently that transcends the easy imagining of man!

In the Atlantic there are no depths comparable to this. The Pacific is the queen of oceans in respect of depth; it may be safely predicted that it will continue to afford surprises to those engaged in surveying its waters.

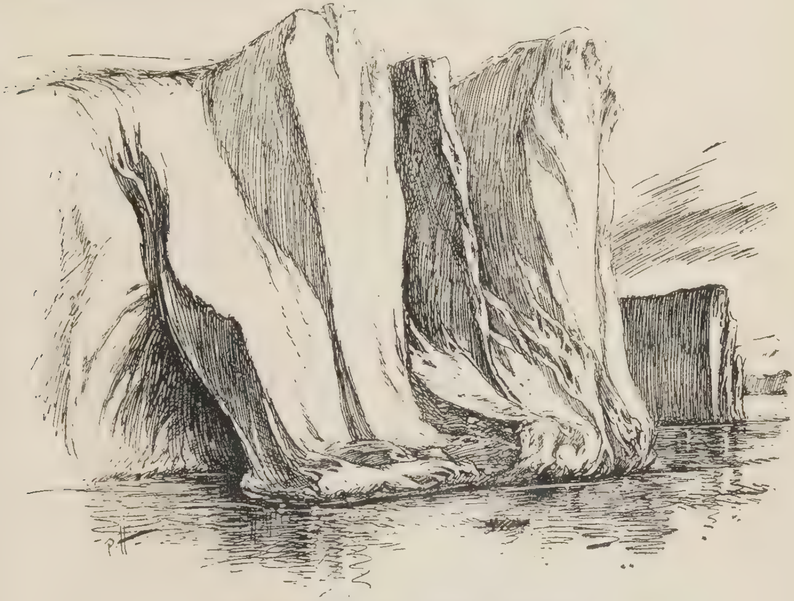
For fifty years after Cook's great voyage of discovery very little more was heard of the South Pole, and the Antarctic Circle was not crossed again till 1820, when an enterprising Russian named von Bellingshausen led an expedition south, discovering two small islands, Peter I and Alexander I, the first land to be found within the Antarctic Circle.

Three years later James Weddell, a retired Naval officer, when out in the Pacific hunting for seals, suddenly resolved to push farther south. Snatching at the moment when the impulse was upon him, he found conditions also in his favour, and he returned in triumph, having reached 74° 15′ S., which was far beyond Cook's record. A great sea in the Polar regions, the Weddell Sea, still bears witness to this exploit, and as a trader Weddell was immensely pleased at having found there a new breed of seal, since known as the Weddell seal.

A WEDDELL SEAL

Traders, who have always nosed prudently after the reckless adventurer, were not slow to appreciate that perhaps these unexplored southern waters might afford them riches, and they cautiously began to send sealers there.

Among these men of business was a firm of shipowners, Enderby Brothers, who honourably combined a desire to expand their trade with a zest for exploration. Through their generosity many whalers sailed with instructions if possible also to attempt geographical discovery, and as a result of these liberal commissions much new information was gained. Captain John Biscoe, an ex-Naval officer in the service of Messrs Enderby, leaving London in 1830, sighted land within the Antarctic Circle which he named "Enderby Land." Like Cook, Biscoe found it difficult to go ashore, but he did succeed in landing on Adelaide Island (latitude 76° 1′ S.).



ICE-CLIFFS OF THE GREAT BARRIER

In 1839, under the instructions of the same firm, Captain John Balleny combined trade and exploration in those waters. He too, sailing within the Antarctic Circle, was staggered by the great cliffs of ice. After much difficulty the crew managed to secure a landing. On all sides was ice—huge, smooth cliffs of ice-protected valleys, white also with great depths of snow. Terrible winds blew across these valleys, and there were continual blizzards of fine snow. And yet in these desolate wastes rose peaks of extinct volcanoes, one of which, rising some

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12,000 feet above the sea, was named "Freeman Peak," after Balleny's second in command, while a group of islands was given the name of Balleny himself.

Following this fine enterprise, there were two others in 1839, one led on behalf of France by Dumont D'Urville, and the other, under Charles Wilkes, representing the United States. General discovery was their objective, together with magnetic observations. Wilkes was a determined and honourable explorer, but his voyage was marred by disaffection among his crews, and this undoubtedly prevented the enterprise from having the high success it deserved. It was, too, a badly conceived expedition in very unsuitable ships. Controversy as to its achievements has raged ever since the conclusion of this voyage. Wilkes's supporters do not hesitate to speak of him as the discoverer of the Antarctic Continent. Others deny him the title. In either case there seems no reason for doubting that he at least sighted Adélie Land, Kemp Land, and Enderby Land.

D'Urville's expedition, sailing from Tasmania in 1840, discovered the coast of Adélie Land. At one time he passed close enough to Wilkes for signalling, but no such courtesy was exchanged, an incident which led to considerable ill-feeling. How amazing is human nature that in so profound a solitude two small vessels aglow with human life could pass without greeting!

Among those then living Captain James Ross was accepted as the greatest authority among explorers on Polar magnetism. In 1831, it will be remembered, he had discovered the North Magnetic Pole, and he now burned to plant the English flag at the South Magnetic Pole. His expedition, which was supported by the British Government, was elaborately equipped for making magnetic observations, and his intentions were widely discussed. It was therefore a cause of extreme annoyance to him, on reaching Australia in the latter part of 1840, to learn that Dumont D'Urville and Wilkes, being already in Australia at the time when Ross was planning his undertaking, had availed themselves of their greater nearness to the Antarctic, and had not only started before Ross himself arrived in Australia, but had taken the route that he had mapped out. He believed they had stolen a march on him, and with a fine scorn, worthy of a better cause, he declared he would disdain to follow in their footsteps; he therefore arranged for himself an entirely new route. As things later turned out, this proved to be no disadvantage.

CHAPTER XXVI

SIR JAMES ROSS

THE *Erebus* and the *Terror*, memorable for the part they have played in both the Arctic and the Antarctic, first became popularly known through the exploits of Captain James Ross in the South Polar region. Ross, who had served in the Navy since the age of twelve, first of all under his famous uncle, Sir John Ross, had very early acquired a passion for exploration. At nineteen he had been with Parry in the Arctic, and before he was thirty he was a well-seasoned Arctic explorer. It was natural that having planted the flag of his country at the North Magnetic Pole he should aspire to repeat the achievement in the South, and this desire seemed at last likely to be gratified in 1839, when the British Antarctic Expedition (1839–43) was first organized. The chief objects of this new expedition were to establish in southern latitudes stations for securing complete series of magnetic observations, and to locate the position of the South Magnetic Pole. Captain James Ross was obviously the right person to command such an undertaking, and with the greatest enthusiasm he began to prepare to carry out the darling wish of his heart. Two very strong ships, which had been used in the Navy as bombing vessels, were overhauled and put under his command. And thus the *Erebus* and the *Terror* sailed from Chatham into the limelight that still plays upon them. Under Ross in the Antarctic they achieved popular renown; as we have seen, with Franklin in the North they blazed into a flame that spread over the world, wresting from the tragic fate of

Sir John Franklin some sort of immortality for themselves.

Ross himself sailed on the *Erebus*, while the *Terror* was in command of Captain Crozier. Scientific experts, carefully chosen for their fitness for the special work to be done, were among the company, and one of these, then a youth little more than twenty, was Joseph Hooker, who was to become famous as a great botanist. This eager youth no doubt recalled to Ross his own early zest in the days when he had served in the North under Parry, and now, at the age of thirty-nine, he could still respond to enthusiasm with the ardour of a youthful spirit. His was a nature far too deep and passionate ever to drop into sterility, and in his eye, now fixed on the alluring South, shone all the excitement it had held when first bent upon the North.

Ross's instructions were general enough to allow him to follow any line of action he might conclude to be the most fitting. His first objective was Kerguelen Island, that storm-tossed spot lying in the Southern Ocean midway between the Cape of Good Hope and Australia, first discovered by the French in 1772 and afterward visited by Captain Cook. Its centre is ice-covered, but its coasts afford anchorage for sealers and whalers, and the island therefore provides some sort of jumping-off ground for the Antarctic, though a glance at the map will show that it is a distant one. Nature by isolating that great frozen stretch surrounding the South Pole seems mutely to indicate the futility of establishing human connexion with it. "This is mine," she seems to say; "take the North if you must, but leave me this." And, whatever the future of the Arctic may be—however much air-travel may affect its development—it does not at present seem probable that the Antarctic is likely to be of practical use to mankind as a place in which to live, or in which crops may be grown, though some who have explored there contend that it offers possibilities either for penguin-farming or sanatoria.

Ross reached Hobart Town, Tasmania, in 1840, and, having established there a magnetic observatory, he was now ready to pursue the second object of his voyage. Conscious that in the *Erebus* and *Terror* he had two ships capable of surviving the effects of ice that would be destructive to most ships, he crossed the Antarctic Circle on January 1, 1841, and steered deliberately for the ice-pack.

Fortune favoured his bold stroke, and his good ships played their part nobly. The ice proved navigable, and the gratified explorer found himself emerging into a fine stretch of open water now known as Ross Sea. Great mountains rose all along the coast, and Ross, having christened them generally "Admiralty Range," dealt out names to the individual peaks, very much as if he had been dealing out cards. The highest he named "Sabine," after one of the chief promoters of the expedition, and after this many of the Lords Commissioners of the Admiralty were complimented similarly; thus Mount Minto, Mount Adam, Mount Parker, and many others found places on the map. To the land itself in this neighbourhood he gave the name "Victoria Land." He failed to reach the mainland, but a landing was made upon Possession Island, a desolate strip apparently without vegetable life other than lichens and mosses, but covered with a swarm of penguins, which fascinated and amused the crew, though the odour that surrounded them was offensive. Pushing south along great cliffs of ice, Ross, in latitude 77° 30′ S., made a still more wonderful discovery—an active volcano! The steam from this volcano rose softly into the cold air, bearing witness to the fact that behind ice thick enough to form cliffs was hidden a smouldering fire, and under that white, virginal bosom lay concealed a fiery heart! At any moment those volcanic forces might rise into battle against the suffocating fingers of ice; at any moment heat might tear asunder its shroud. This active volcano, rising some 13,000 feet above the sea, was named "Mount Erebus," and an extinct volcano of 10,000 feet opposite was dubbed "Mount Terror."

As the eye of Ross travelled over the landscape wonder after wonder revealed itself. Before these Titanic mountains stretched a wall of ice of immense thickness, ending in a smooth, flat top, unbroken by any chines. Awed by this fresh proof of nature's grandeur, Ross sailed eastward along this great frozen wall for 450 miles without finding harbourage. What hope could there be for man in a land such as this? Man's six feet seemed incredibly small when matched against such proportions, where cliffs of ice nearly two hundred feet high towered far above the ship, making it appear a mere cockleshell. Enormous icicles hung from the cliffs, thus proving that it sometimes thawed, "which otherwise," remarks Ross, "we could not have believed."

More than once it seemed likely that the explorers would perish on the way. Gigantic icebergs obstructed their path, being sometimes so close that no opening between them could be seen; and more than once they came very near to shipwreck. "Sublime and magnificent as such a scene must have appeared under different circumstances," writes Ross, "to us it was awful, if not appalling, . . . and our situation was the more painful and embarrassing from our inability to make any effort to avoid the dreadful calamity that seemed to await us."

To the terrors of such a scene there was often added the misery of a blizzard, one of the greatest enemies of the

Antarctic traveller, who suffers considerably more from wind and snow than the explorer in the Arctic. The darkness of winter, too, is more harassing in this less habitable land, and the displays of the aurora australis lack the brightness of the aurora borealis. Ross saw some displays beautiful in form, but practically without colour, though in 1841, in latitude 60° 21′ S., he wrote: "The Aurora again afforded us considerable light at night, in the absence of the moon . . . [it was] of a yellow colour, forming an arch twenty degrees high, and at times exhibiting vivid flashes of a bright-pink colour."

BIRTH OF AN ICEBERG

On the whole, it may be gathered that, though the lot of an explorer in the Arctic may be a hard one, the lot of the Antarctic traveller is harder.

After nine exciting weeks within the Antarctic Circle Ross returned from his first voyage south to his base at Hobart Town, trailing behind him much glory. This voyage had given form and colour to the South Polar region, and that which had so far been in the minds of men but a vague mass of land now took on reality and shape; the great continent which may be said to have been suspected by Cook began to assume personality.

Ross repeated his incursion into the Antarctic Circle on January 1, 1842, and again in December of the same year —the summer season in the South.

Compared with his first voyage these two others were disappointing. As if resenting his earlier entry the ice threatened him even more grimly. Great icebergs planted themselves in his path; terrible winds harassed his ships, and snow drove incessantly upon them. As if to accentuate these warnings the *Erebus* and *Terror* collided, and all but brought the expedition to a tragic end.

After being beset in the pack, so dense that there "was not the smallest hole of water to be seen," they emerged only to find themselves in violent collision with icebergs, moving before the force of a terrible gale. Ross goes on:

> Our ships were involved in an ocean of rolling fragments of ice, hard as floating rocks of granite, which were dashed against them by the waves with so much violence that their masts quivered as if they would fall at each successive blow . . . mountainous waves, throwing huge masses [of ice] one upon another, and then again burying them deep beneath its foaming waters, dashing and grinding them together with fearful violence. The awful grandeur of such a scene can neither be imagined nor described, far less can the feelings of those who witnessed it be understood.

After his third voyage to the South Ross returned to England in 1843, having made his name famous throughout the world. Feasts and garlands awaited him. Fashion and learning united in showing him attentions, and no knighthood was ever more popular than the one that made him, in 1844, "Sir James Ross." Exploration became a fashionable topic, and those who were most interested in serving the Arctic snatched this fortunate moment for furthering their desires.

During all this excitement a new voyage for the *Erebus* and *Terror* was planned. Having acquitted themselves so gallantly in the South, the good ships were now to be used in a last great search for the North-west Passage—at this date still unfound. Thus out of Ross's triumph in the South sprang another great expedition, tragic but triumphant. Into the icy North, in 1845, plunged the *Erebus* and the *Terror*, never to return. And after them, in 1848, went Sir James Ross, searching and hoping, hoping and searching. From this voyage he returned safely but empty-handed, nor did he go again to either Polar region. He could afford to contemplate with satisfaction his achievements. His services as an explorer had greatly enriched man's knowledge, and his name is for all ages written in large letters in both the Arctic and the Antarctic regions.

CHAPTER XXVII

WINTER IN THE ANTARCTIC

ON his return to England Ross reported that whales were to be seen in abundance in the Antarctic, a remark which excited much interest among whalers, who, finding the Arctic fisheries showing signs of exhaustion, dreamed of marvellous new catches in southern waters. However, against the probability of finding riches in the Antarctic had to be put the certainty of great hardship, immense expense, and very serious risk to life. No friendly Eskimos lined the Antarctic coast. The whaler who went south of 60° S. must depend entirely upon himself for help and sustenance. Not much comfort could be expected from a region where south of 70° the average summer temperature was but 29° F. During the hottest month, February, the thermometer might register an average of 34°, but even by the most optimistic this could hardly be regarded as sultry.

While whalers were prudently considering the pros and cons of business in the Antarctic an enthusiastic scientist, Matthew Maury, deeply interested in probing the yet undiscovered wonders of the sea, was urging upon the people of the United States the need for exploring the secrets of the southern seas. Oceans are far more than mere stretches of water. They may be studied with a dozen different aims in view. The study of currents, for instance, is in itself a science; the shortest path across the sea is by no means always the quickest. Maury contended that a prolonged study of the ocean would provide knowledge of practical use in commerce, and he finely urged that the nations of the world should unite in an endeavour to investigate this interesting field of study in the South.

But the introduction of steam did not help Maury, for it removed many of the difficulties that oppressed the mariner. The little sailing ship, sensitive to every fluctuation, and often tossed in a moment into an unexpected crisis, needed for its manipulation a direct skill not demanded by steamships capable of weathering almost any storm. As Dr W. S. Bruce has acutely observed, we tend to know less and less about the sea. Our great liners, following precise paths with marvellous exactitude, never hobnob with the sea like little sailing craft liable to be blown many miles out of their course. Flirting between sea and ships is a past art.

Moreover, the world-supported search for Franklin in the North, the Crimean War, the Indian Mutiny, and the American Civil War all helped to arrest public interest in the Antarctic, and it was not till 1875 that a fresh attempt was made to investigate the southern seas, when an expedition was sent out under Captain George Nares.

This voyage was intended rather to obtain scientific knowledge than to reach a high latitude, and, though the expedition penetrated within the Antarctic Circle, Nares did not seek to go far. His ship, the *Challenger*, was fitted with auxiliary steam, and was the first vessel of this kind to cross the Antarctic Circle. On their return the explorers brought with them valuable deposits and fragments of rock, and from these specimens geologists were able to deduce with certainty that the unexplored mass of land was a continent. Some years later the *Scotia* on a similar errand dredged up a quantity of blue mud, a deposit which invariably indicates the presence of continental lands.

From time to time brave spirits in England, in America, and in Europe urged the duty of further Antarctic exploration. The British Association was approached, so, too, was the Royal Society and other lesser known learned bodies. But meantime the whalers came forward. What about those whales reported by Sir James Ross? Was it possible that in the Antarctic waters lay riches waiting to be caught? A shrewd whaling skipper, David Gray, endeavoured to float a company for this purpose, but he did not succeed. The idea, however, had been planted, and in 1892 whalers set out from Dundee to try their fortunes in the Weddell Sea. To their disgust they found that, though there were many whales, there were no right whales—that is, no whales of a kind which could at the same time furnish the whalebone which they sought and be hunted with success by the primitive methods then in use by the whaling crews. But there were seals in plenty, and these would make a good enough cargo. The skippers, intent rather on making money than upon discovering new land, were somewhat impatient with the scientists who accompanied them. To a captain bent upon getting a saleable cargo a geologist collecting stones is more than a freak; he is a nuisance, and apt to be treated accordingly. And so the whalers returned from the Antarctic, loaded with seals, but without having traversed new waters, and, the dream of a great whale-fishery in the Antarctic having been dissipated, commerce turned its attention elsewhere. "It became quite clear," says Dr Mill, "that unless under an exceptional captain a commercial voyage can yield comparatively little of scientific value."

Five years after the adventurous voyage of the Dundee whalers two expeditions sailed to the Antarctic with memorable results. The first of these (1897–99), a Belgian enterprise, was led by M. de Gerlache in a ship known as the *Belgica*. With him as mate was Roald Amundsen, while the surgeon was Dr F. A. Cook, who had already spent a winter in the Arctic with Peary.

The vessel sailed by way of Tierra del Fuego, making her way toward Graham Land and the Bellingshausen Sea. Very heavy weather met the *Belgica*, warning her of what was in store, but de Gerlache had an intrepid mind, and he forged boldly into the ice, coming to rest at last in latitude 71° 31′ S., off Alexander Island, where his ship was firmly frozen in. Here the ship's company settled down to endure what no man had so far experienced—an Antarctic winter. On May 15 the sun disappeared entirely, and for weeks the *Belgica*, fast in her bed of ice, drifted with the floe, though never moving far. Backward and forward in a small area she drove, while from on board the ship the men stared hopelessly into the darkness. Occasionally there was a glow from the aurora australis, but it showed much less brilliance than the northern aurora, and the cold gleam of the pale moon upon the ice gave everything an appearance of ghastly unreality. A deep depression reigned indoors and out, and, in spite of Dr Cook's ingenious efforts to use the heat of the fire as a substitute for the sun's rays, the health of the company sank low. Dreary food and dreary days had resulted in a very debilitated crew.

The winter being over, every effort was made to free the ship, and in November 1899 the *Belgica* reached home. Her voyage had been clouded with misery, but it had not been without useful results. Much investigation of the sea had been undertaken with the assistance of nets lowered through holes cut in the ice; soundings had been taken, and sea temperatures observed. Moreover, the *Belgica* was the first ship to spend a winter in the South Polar region, and she brought back men eloquent of the conditions prevailing in those regions through the long months of darkness.

From across the Antarctic was to come corroboration as to the severity of the South Polar winter, for while de

AMUNDSEN'S POLAR TRANSPORT

From "The South Pole," by Roald Amundsen, by permission of the author

KILLING SEALS

From "The South Pole," by Roald Amundsen, by permission of the author

Gerlache had been wintering in the *Belgica* off Alexander Land, an English expedition, financed by Sir George Newnes, was deliberately wintering in a hut at Cape Adare.

The leader of these explorers was Borchgrevink, a Norwegian with some English blood, who had already visited the Antarctic in 1894–5. On this earlier occasion, having landed on Possession Island, Borchgrevink had discovered a lichen, thus proving the existence of vegetable life in that neighbourhood. He was eager to extend this knowledge, and, leaving England in August 1898 in the *Southern Cross*, he reached Cape Adare in February 1899, prepared to spend the winter there. Thus, as Dr Mill in his *The Siege of the South Pole* graphically observes:

> It happened that at the same time, . . . but on opposite sides of the vast unknown Antarctica, all hands on board the *Belgica* were toiling with all their might to break from their prison in the floe before a second winter befell; and all on board the *Southern Cross* were straining every nerve to unload stores and the material for a house in which to pass the first long night on land within the southern circle.

The *Southern Cross* was not to remain. She was to go to New Zealand before the new ice formed, leaving the men in their hut, to which she was to return as soon as the weather permitted. This plan was carried out, and in March 1899 the *Southern Cross* sailed off. With what strange feelings the ten men on land must have watched her disappear! They were not to see her again till February 1900, by which time many things would have happened. The force of the blizzards, the steepness of the surrounding land, and the treacherous nature of sea-ice made it impossible for much land exploration to be carried out, but a very complete scientific record was kept.

With the return of the *Southern Cross* in 1900 the nine surviving members of the expedition gladly evacuated their hut and embarked again on their ship. Before turning homeward the *Southern Cross* made for the Ross Barrier, unvisited since the day of its discoverer and namesake. Borchgrevink, anchoring his ship alongside the ice-cliffs, made a short journey south, and reached latitude 78° 21′ S., thus getting very slightly nearer the Pole than Ross had done in his great 1839–43 voyage. As they sailed close to the ice the temperature fell to −8° F. And yet this was summer! No wonder the crew of the *Southern Cross* rejoiced when the course of the ship was turned, and they began the journey back; and very, very lovely must England have seemed to those wanderers when they reached home in June.

It had thus been proved, by the *Belgica* and the *Southern Cross*, that men could pass an entire winter in the Antarctic and survive. This fact having been established, it now seemed feasible that the South Pole might be reached.

CHAPTER XXVIII

OLD IDEALS IN A NEW CENTURY

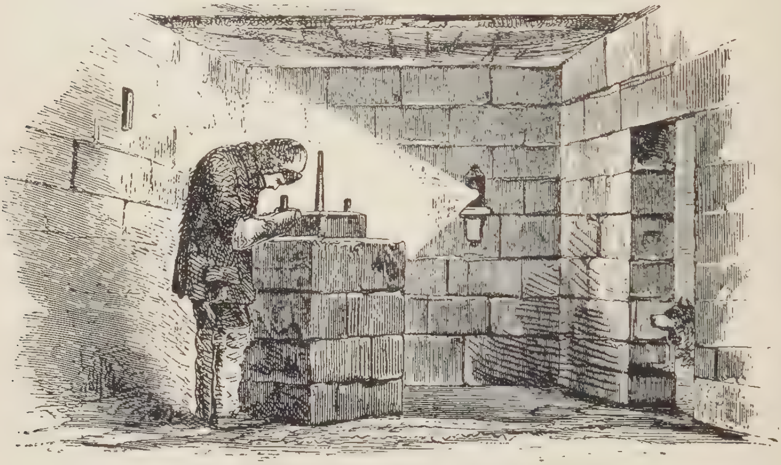
THE era in which we live may perhaps be described as the Age of Investigation. In literature, in art, in religion, in music, in surgery, in philosophy, in every branch of science, there is a remarkable inclination to probe and discover. It is not astonishing, therefore, to find the opening years of the twentieth century concerned largely with exploration. In 1901 Captain R. F. Scott set out on his great voyage in the *Discovery*. Only a few days later than Scott a German expedition in the *Gauss* sailed from Kiel, also for the Antarctic. Thus two great nations, thirteen years later to be locked together in battle, were at the moment united in pursuit of a common end.

The aim of the Germans was to procure more detailed knowledge of what had been already partly explored, rather than to penetrate farther into the unknown; that is, the expedition was mainly scientific, and Professor von Drygalski was its joint-leader, together with Captain Hans Ruser, who was in command of the ship.

The *Gauss* proceeded to Kerguelen Island, whence she steered southward in the direction of Knox Land. Icebergs gave a chilly greeting before the Antarctic Circle was reached, and the thin, keen winds characteristic of the South Polar region stung the men severely.

But temerity was rewarded by the sight of a shadowy outline, and when this was found to be land, it was given the name of "Kaiser Wilhelm II Land," and a peak rising above it was christened "Gaussberg." Within sight of this discovery the *Gauss* was made fast to a floe, and the explorers settled down to winter on the verge of the Antarctic Circle.

And thus amid the icy solitude, disturbed only by the visits of penguins, these men calmly set themselves to carry on their investigations. Needing an observatory, and having no other materials with which to build it, they cut out blocks of ice, and with these reared a house in which they were able to carry on their work.



AN OBSERVATORY BUILT OF ICE-BLOCKS

By efforts such as these, carried on in darkness, and attended by what most people would regard as immense discomfort, knowledge is gained, and the world in general, receiving lightly and often ungratefully fruits won at the cost of great pain, is benefited.

By June 1903 the *Gauss* was back at Cape Town, but prepared to go again to the Antarctic in the following autumn. From Germany, however, came orders to return to the Fatherland, and the *Gauss* therefore started for home, reaching Germany in November 1903, and receiving there the welcome she deserved.

About the same time there returned to Tierra del Fuego a third expedition, hailing from Sweden, which also had started in 1901. The *Antarctica,* which carried this expedition, was under the command of Captain C. A. Larsen and Otto Nordenskiöld, the latter a nephew of the great Arctic navigator who had first sailed by the North-east Passage.

Otto Nordenskiöld, a born explorer, had expended much energy in gathering funds for his enterprise, and no one ever set out for the unknown with higher enthusiasm. How strange, too, were the adventures of his party during the two years they were absent! Having tried in vain to weather the ice in the neighbourhood of King Oscar II Land, Nordenskiöld fell back upon Snow Hill Island, where he and five companions established themselves for the winter, while the ship went off on other pursuits, to return after the months of darkness to pick up her shore-party.

With the winter darkness came weeks of blizzards that made life miserable. On their desolate island Nordenskiöld and his companions calmly pursued their tasks, thinking often of the return of the sun, and of the ship due to come back with it. The dark months passed, and the so-called 'summer,' but where was the ship? Day after day the unfortunate men raked the horizon without finding her. Darkness settled in once more, and the party prepared to face another winter on the ice. They were properly equipped, and so far not anxious. But what if help should never come? The second winter passed and hope sprang again, and in October 1903 a sledging-party under Nordenskiöld was startled by the sudden appearance of two men—two filthy, haggard vagabonds, rather than civilized beings, they appeared. Surprise was quickly followed by delight on discovering in these 'ragamuffins' two of their original party, bringing with them news of the *Antarctica*!

Dr Mill in his *Siege of the South Pole* has graphically retold their story. On her way back to Snow Hill Island ice had stopped the *Antarctica*, and these two men had offered to strike across the floes to the Nordenskiöld camp. The intense cold, however, had defeated them, the ship did not reach the rendezvous, and they were forced to spend the winter in a rough shelter they had managed somehow to build. But they had survived! And now, miraculously, they were here, lean and unkempt and half hidden in hair, but alive! Could there be anything stranger?

And yet hard upon this surprise came another. A few days later a relief ship, the *Uruguay*, come from the Argentine to look for Nordenskiöld, steamed toward Snow Hill Island. And so dismay vanished, a refuge being sure. But what of their own ship? Where was the *Antarctica*? This question trembling on their lips was suddenly and wonderfully answered, for in the evening of the very day when the *Uruguay* arrived there stalked into camp Captain Larsen and five other men from the *Antarctica*! Thus by one of those coincidences which prove that truth is stranger than fiction the day of the rescue of the Snow Hill party became the day of the rescue of the entire company, the three separate parts of which were now happily reunited.

Captain Larsen had much to tell. The *Antarctica*, caught in the ice, had at last sunk, and the crew had been forced to live through the winter on the ice, from which they had now struggled to Snow Hill Island. But that they should arrive on the very night of the coming of the *Uruguay*, that seemed as incredible as a fairy-tale! But yet, after all, it is often the fairy-tale that turns out to be true. Two days later, in November 1903, these men, reunited in so remarkable a manner, bade good-bye to Snow Hill Island. They carried with them, aboard the

Uruguay, many valuable records and a splendid collection of fossil plants, incomparably the finest of its kind ever brought back from the Antarctic. One of the most interesting things about the Poles is the evidence of former warm climates which is provided by beds of coal and fossil plants.

Not far away from the scene of Nordenskiöld's adventures the Scottish scientist W. S. Bruce had also established an expedition in winter quarters. With the generous assistance of Mr Andrew Coats, Bruce had equipped the *Scotia*, and he set off in November 1902 with a carefully selected staff of scientific helpers. Captain Thomas Robertson, the skipper of the *Scotia*, knew a good deal about ice-navigation, and he brought his ship safely to Scotia Bay on Laurie Island, one of the South Orkneys, where a lengthy stay was made and a scientific survey of the surrounding country carried out.

Early in 1904 the expedition left the island and proceeded to latitude 74° 1′ S., where they found land which they named "Coats Land" in honour of their patron. On her way back to Scotland the *Scotia* continued to make deep-sea soundings which added to the important results obtained in earlier stages of this important voyage.

A French expedition under Dr Charcot about the same date must also be mentioned.

Thus in the early part of the twentieth century we find that fine enthusiasm for investigation which is the sure sign of life blossoming simultaneously in many parts of the civilized world.

CHAPTER XXIX

SCOTT'S VOYAGE IN THE "DISCOVERY"

IT is safe to say that no great enterprise has ever been carried out successfully without enthusiasm. As petrol to the car, so is enthusiasm to any undertaking; it is the soul of the endeavour—the spiritual essence upon which the business is run. Most especially is this true of expeditions involving man's long absence from the companionship of his fellows, in a severe climate and under a sunless sky. In such conditions everything unites to produce in the mind a feeling of utter weariness. Life loses its savour; the body, quick to register the sensations of the mind, begins to droop. Food, warmth, and light can do much to keep off these unhappy sensations, but unless they are accompanied by enthusiasm much of their value is lost. No man can hope to come back from the Polar solitudes in health who has not been fed spiritually as well as with mere food.

The leader of an expedition, therefore, has a double duty. It is his job to look after the health and comfort of his men; it is up to him also to animate them with hope. And this he can only do by keeping within his own bosom a never-dying belief, not only that the undertaking is worth while, but that it is everlastingly worth while.

Captain Robert Scott was a leader who fulfilled his duty in this spirit, and the story of his accomplishments in the Antarctic reveals his innate nobility no less than it records a magnificent and heroic physical performance. The tangible and the intangible are here fused into one, making the ecstasy of self-sacrifice a more than sufficient reward.

The "Discovery"

The institution of the enterprise undertaken by Scott goes back at least as far as the International Geographical Congress in 1895. Sir Clements Markham, who presided, had already made up his mind that there must be further Antarctic exploration, and those who knew him were well aware that, having determined something must be done, he would carry his point. Gifted with an imagination that equalled the force of his character, he held to his course in the face of every kind of opposition, not fearing to proclaim his faith in an enterprise upon which many looked coldly, and some with open derision.

Fortified by a promise of £5000 from the Royal Geographical Society, Sir Clements Markham cast about for further subscribers, and in 1899 his persistence was rewarded when Mr Llewellyn Longstaff offered £25,000. This splendid gift at once assured success, and others came forward to assist a project now made feasible. Royal patrons were found in the Prince of Wales (later King Edward VII) and the Duke of York (later King George V), and the Government, hitherto apathetic, under pressure from Mr Balfour contributed £45,000. And so the *Discovery* was built, and the expedition took shape.

Up till this time Scott, who was an officer in the Navy, was without any great desire for exploration. He himself declares that his enthusiasm was first set alight by a chance meeting with Sir Clements Markham in 1899. "I may as well confess at once," he says, "that I had no predilection for Polar exploration." But being in London on short leave, and meeting Sir Clements, he went with him to his home. What passed between the two men is not recorded, but that Markham contrived to light in Scott a burning enthusiasm is obvious from some words of Scott's. "That afternoon," he wrote, "I learned for the first time that there was such a thing as a prospective Antarctic expedition; two days later I wrote applying to command it, and a year after that I was officially appointed."

In embarking, therefore, upon the stupendous enterprise of exploring the South Polar continent Scott was engaging in his first encounter with Polar ice and snow. Away in the Far North, on the frozen plains of Greenland, Peary had been slogging away for ten years against ice, and he had brought to perfection the use of ski and dog-drawn sledges. He had learned how best to clothe himself; the flesh of seal and walrus had become delicious to him; he had obtained, as it were, a friendly nodding acquaintance with the elements ruling that ice-bound country. In all such matters Scott was a mere novice. He had still to learn the full meaning of the word 'Polar.'

On two points of equipment Scott and Peary differed widely. Peary believed wholeheartedly in dogs, his idea being to have as many dogs and as few men as possible. Scott, on the other hand, could not reconcile himself to the idea of taking dogs along as future food, to be killed one by one to feed the survivors after they had struggled along for days dragging stores. He found too that dogs required very careful handling, and he infinitely preferred to drag the load rather than exhaust himself in urging forward unwilling or ailing dogs. After his first long sledging journey, ending February 3, 1903, during which all the dogs perished, he observes: "When, in the following year, I stepped forth in my own harness, one of a party which depended on human labour alone, it would not be easy adequately to convey the sense of relief which I felt in the knowledge that there could be no recurrence of the horrors of the previous season."

Why, on the first journey, the dogs should have suffered to such a terrible extent was something of a mystery, and continued to torment Scott's sensitive soul. He believed that to some extent the food—a fish diet—was responsible;

it may have held germs of poisoning. Then, too, bred in the North, these animals began to moult at a season which in the South was winter, and though, Nature adapting herself to environment, their new coats grew very quickly, the process was not without its discomforts. Whatever the cause, or causes, the fate of his nineteen dogs, none of which survived to the end of the trip, had left a deep scar on Scott's mind. "This is the last of our dog team," he wrote at the time, "the finale to a tale of tragedy: I scarcely like to write of it."

One other reference to his dogs may be of interest. Some puppies, born in the Antarctic, were being conveyed to England, and on being offered water did not know how to lap. Their experience of drinking so far had been by means of gnawing lumps of frozen snow, and they were puzzled by fluid. "In fact," says Scott, "they grew very thirsty before they could be persuaded to drink by thrusting their noses into the water tins."

So much for dogs as assistant explorers, as far as Scott's early experiences are concerned. On the question of ski he also differed widely from Peary. But here again it must be remembered that all his life Peary had been familiar with snowshoes and sledging, while Scott, at a time when winter sports in Switzerland had not yet become the vogue, arrived in the Antarctic equipped with ski but quite unskilled in their use; and one of the first things he and his men did after establishing a hut on shore was to organize trial ski-ing parties. On January 5, 1902, he writes: "With very few exceptions we had none of us used ski before, and consequently our first trial caused vast amusement."

On July 31, 1901, the *Discovery* sailed from London, and after anchoring for a time in Cowes she steamed for the Cape. From here she passed to New Zealand, whence she shaped her course south, arriving early in January

1902 on the shores of the island upon which tower those great peaks Mount Erebus and Mount Terror. Safety for the winter being the first anxiety, careful search was made for a suitable harbour, and M'Murdo Sound, under the shadow of Mount Erebus, was finally chosen. Into this nest the *Discovery* was steered, to lie there for many frozen moons.

The *Discovery* had been specially built to withstand the intense pressure of ice; she had been constructed of wood, which is more elastic than metal and can therefore resist a shock that would hopelessly damage the apparently stronger but more brittle steel. Steel, however, had been used to encase the bow, and the latter was so shaped that when driven at the ice the ship would rise on to it, her weight splitting the floe so that she could forge ahead into the crack thus made. It being intended that she should make what might be termed a lengthy residence in the ice, the *Discovery* was built to endure a long series of shocks without needing extensive repairs that could not easily be undertaken out of dock. Her mission was to afford a permanent home to her crew, who would go out from her upon long and adventurous sledge journeys.

Scott's ambition was to penetrate well into the interior of Antarctica—a region as yet untrodden by the foot of man—and the difficulties of his mission were greatly increased by the fact that, as we have seen, he had no earlier knowledge to aid him. The first to penetrate such inland deserts must also be the first to find out the nature of the land and the severity of the elements.

During the second summer of their stay in the Antarctic Scott, Shackleton, and Wilson were away from the ship for ninety-three days, during which they reached latitude 82° 17′ S., traversing a country never before trodden by man, and discovering two great mountains, which they named Mount Markham and Mount Longstaff, after the two great supporters of the expedition. Famished, frost-bitten, and suffering great miseries from wind and blinding snow, the indomitable three exulted in their performance, and Wilson, more than half frozen with cold, would sit at the tent door drawing sketches of the distant mountains at a time when food supplies were so low that the thoughts of all three turned continually to feasts. Even in their dreams they saw before their eager eyes delicious dishes that were always snatched away before they could grasp them. One treat they gave themselves on Christmas Day, when Shackleton dug out from the toe of a sock a round object the size of a cricket-ball. A plum-pudding! To the starving three it was more than a pudding. It was a banquet. "Heated in our cocoa," says Scott, "our plum-pudding was soon steaming hot, and stood on the cooker-lid crowned with its decoration [of holly]. For once we divided food without 'shut eye.'"

THE "DISCOVERY" IN THE ICE

Scott, Shackleton, and Wilson returned safely to the

Discovery, but Shackleton, who had been stricken with scurvy during the return journey, was invalided home in March 1903 on the *Morning*, a relief ship sent out by the Admiralty.

Summer came and went, but without any thawing of the ice, and the *Discovery* remained fixed in her cage. With winter came low temperatures—67° or 68° below freezing—but the wind was endurable, at which all rejoiced, for the Antarctic blizzards surpass in ferocity even the "big winds" feared by the Eskimos in the North. On Scott's last expedition Cherry Garrard and his party encountered 109 degrees of frost while living in tents, compared with which the conditions at Hut Point were not bad. But whatever the weather outside, within the ship there was continued good-fellowship. There was plenty of food, and alternations of work and play in an atmosphere of good humour and friendliness, which not only kept every one cheerful but maintained the general health of the ship. Scott, looking round his company, justly felt satisfied.

All thoughts were fixed on the time when the sledging parties would start again, and September 1903 found every one in a state of bustle. The sun had returned; all were in high spirits, every one hoping that *he* would not be left out of one or other of the expeditions. The object Scott most desired to investigate was the Ferrar Glacier, and before the final attempt upon it many short journeys were made in its direction. In spite of very low temperatures and literally appalling blizzards, all the various journeys were brilliantly successful. On one of these Scott and two others reached a height of 9000 feet above the sea, dragging their entire equipment; no dogs were with them.

Scott felt he was now experienced in the work, and, with a touch of well-merited pride, he observes: "We met with immense difficulties, such as would have brought us hopelessly to grief in the previous year, yet now as veterans we steered through them with success."

By Christmas 1903 the sledge journeys were over, and the various units of the party reassembled in camp. Outside in the bay the ice looked as unyielding as ever, and ice some six or seven feet thick clung to the *Discovery* as ivy embraces an oak. Ice-saws were got out, and the working party of thirty men was divided into three groups, each working in turn for four hours at a time. To saw through a barrier of ice miles long seemed as hopeful a task as emptying a well with teaspoons, but it was attempted in a spirit of optimism. However, Scott was soon forced to realize the futility of the task, and he began to search for other methods.

SLEDGING WITHOUT DOGS

At this juncture anxiety was relieved by the return of the *Morning*, which now appeared in company with the whaler *Terra Nova*. The Government had sent the ships to the relief of the expedition, and they afforded an easy means of escape. But leave the *Discovery* behind! The very thought cast a gloom over all, and Scott resolved that till the last minute he would not give up hope of rescuing his ship. Day after day he looked eagerly for signs of the spring thaw. Every piece of ice that broke away was a reason for joy. Scott's mind was so absorbed with this problem that he could think of nothing else. Preparations for departure were carried on, and yet still he cherished the hope of freeing his ship. But the ice seemed inflexible. "Our spirits," he wrote on February 3, 1904, "are steadily falling." Unsuccessful efforts were made by exploding charges in holes bored in the ice. The sea beneath the ice remained calm; there was none of that restless surge which precedes the breaking up of ice. The *Discovery* seemed doomed to be abandoned.

And yet, as so often happens, when everything seemed most hopeless there was a sudden change. Far below the ice there were stirrings; the ocean, stronger even than the ice, was exerting its power, and the floes that had defied explosives now began to part. A northerly wind and swell brought about the change. Says Scott:

> In the midst of this peaceful silence was an awful unseen agency rending that great ice-sheet as though it had been naught but the thinnest paper. . . . We knew that the heaviest battleship would have shattered itself ineffectually against it, and we had seen a million-ton iceberg brought to rest at its edge. . . . Even Nature had seemed to pause before such a vast difficulty. . . .
>
> But now without a word, without an effort on our part, it was all melting away, and we knew that in an hour or two not a vestige of it would be left.

And so at the last hour the *Discovery* was saved. On February 14 it was evident the ice was yielding. Breathlessly every one watched the forces of nature at work. By February 16 the *Discovery* had come into her own again, and with all hands aboard she steered for home. In September 1904 the *Discovery* reached England, anchoring at Spithead on the 10th after an absence of rather more than three years, having triumphantly carried out a great mission. The South Pole still lay beyond man's reach, but the first long step toward it had been taken. If only some small portion of the vast southern continent had been traversed the *Discovery* had been well christened, for the great blank indicated by the word "Antarctica" began to be dotted with names, glowing in the dark like sudden candles, as discovery succeeded discovery.

CHAPTER XXX

SHACKLETON'S VOYAGE IN THE "NIMROD"

SHACKLETON, bitterly disappointed at being invalided home from the *Discovery* expedition, cherished a deep hope of being able to go back some day to the Antarctic as the leader of a new expedition. But funds were hard to find. Individuals who were generously disposed toward South Polar research had already given largely toward the expenses of Scott's journey, and the various societies to which appeals might be made were equally hard to move. Over and over again Shackleton was on the verge of despair, but his inflexible determination came to his aid, until eventually, in 1907, he found himself in command of the *Nimrod*, with a band of enthusiastic helpers pledged to do their utmost to reach the South Pole. Far away in the Arctic Peary had his eye fixed upon 90° N. Shackleton, as eagerly peering south, saw in his mind's eye the Union Jack shining gaily through drifts of snow above the South Pole.

In 1907, with this vision to lure him on, Shackleton left England full of hope, to return some two years later not entirely successful, but covered with glory.

Many explorers have started off with more or less vague ideas as to the scope of their journey, but Shackleton had a firm and clear conception of his desires. He would divide his company into groups, and each should attempt a definite quest. One group should seek to reach the Pole: another should plant the flag at the Magnetic Pole; a third should investigate the Ross, or Great Ice, Barrier.

This ambitious programme was kept faithfully in the foreground, and, though it was not possible to fulfil it in every detail, in the main Shackleton carried it through triumphantly.

By this date there had been so many Polar expeditions that the provision of their equipment had grown almost into a fine art. Food could be calculated to a nicety; clothing also. But in two respects Shackleton introduced innovations. He took with him about ten Manchurian ponies, and also a motor-car with wheels specially adapted for travel over snow. He believed that the ponies would be easier to manage than dogs, and stronger; and in the event of starvation they also would afford food—a consideration which, however it may seem, was afterward found to be of vital importance. A starving man does not stop to choose his diet. Anything which can be masticated is eaten.

On leaving New Zealand the *Nimrod* met with terrific seas, and more than once it seemed as if the crew might never reach the Antarctic. The decks were swept with floods of water; life was one long, wet misery. Shackleton, who remembered the roomier and carefully constructed *Discovery*, yearned often for her; in comparison the *Nimrod* was a very bad successor.

But the *Nimrod* was true to her name. She had come out to hunt the South, and south she went, crossing the Antarctic Circle early in January 1908. To the amazement of leader and crew no pack was met with, but the ship steamed south through a fleet consisting of thousands and thousands of icebergs. By January 19 they were in latitude 74° 45′ S., and no check to their triumphant progress was received until the edge of the continent had been reached.

Shackleton's intention was to run along the Ross Barrier until he should find a suitable camping-place in the direction of King Edward VII Land—a pack-bordered land which had first been sighted by Scott on the previous voyage. Having found this, he intended to unload stores and winter on the Barrier, the *Nimrod* meanwhile returning to New Zealand, and coming back again when the seas should be clearer. From their winter quarters the explorers, as soon as the weather permitted, would attempt to carry out their programme.

With this plan in view, Shackleton sailed along the edge of that marvellous barrier, towering high above the *Nimrod*, a glittering, solid ice-cliff. More than a hundred feet high it rose into the sky, silently emphasizing the majesty of nature. From the *Nimrod* amazed eyes stared at this phenomenon, sublimely reminding them of the littleness of man. To Shackleton, anxiously searching for an inlet in the smooth, unbroken surface, the ice seemed hostile. Man was not wanted there. This impression was strengthened by the appearance of a chain of great icebergs. Should the *Nimrod* be caught between these foes she was doomed; nothing on earth could save her from being crushed to splinters. Retreating from a

COAST-LINE OF THE GREAT BARRIER

danger that would plainly have ended in catastrophe, Shackleton took another course, but still kept in the direction of King Edward VII Land. But there was no friendly inlet, no welcoming bay. "The forces of these uncontrollable ice-packs," he writes, "are stronger than human resolution, and a change of plan was forced upon us."

Intensely disappointed at being unable to winter on King Edward VII Land, Shackleton, having made up his mind that such action was inevitable, turned to seek another camping site in the direction of M'Murdo Sound, where the *Discovery* had wintered. Finally he settled upon Cape Royds, with the familiar smoke of Mount Erebus as a background. Here, after immense labour, the stores were landed; a small, stout hut was built; and just before February closed the *Nimrod* got away, to the obvious relief of her skipper, Captain England, who was fearful for the safety of his ship. Shackleton too was anxious for her to start while the sea was still open, and on February 22 they watched her go, the desolation caused by her departure being tempered by a feeling of thankfulness that she had not been frozen in. The first chapter in the history of the expedition was now ended; on the whole, it was a successful one.

Left to themselves in a vast barren land this little handful of human beings drew into close companionship. The small size of the hut made it necessary to live literally cheek by jowl; and, cut off from all other human communion, they began to form those close intimacies that run like a gold thread through all such undertakings, proving that happiness depends not upon the multitude of one's friends.

So far it had been a time of sunlight. Throughout the whole twenty-four hours it was light, and every effort was made to push on with preparations before the coming of darkness. There was plenty to be done, even in the immediate neighbourhood. The ponies had to be exercised and fed; stores must be carried to places of safety; cooking, mending, and washing were all necessary. And already a terrible blizzard, with unusually low temperatures, had covered the stores still out in the open to a depth of several feet with frozen spray, proving the temper of the weather, no less than that of the half-frozen diggers, armed with crowbars with which to attack the icy covering. If this was the greeting of summer what might not winter do? The question must have occurred to more than one mind.

Then came darkness; perpetual day gave way to perpetual night. And so great were the gales that a cable of strong wire was passed over the hut, the ends buried deep in the ground, and the ground douched with water, forming a cement. The cable froze into the ground, thus securing the dwelling, which might otherwise have been torn bodily from the ground. From this sanctuary short sledging journeys were made whenever possible, as a preliminary to the great endeavour to be undertaken in the spring.

As a background to Cape Royds, as has been said, stood Mount Erebus, and toward this all eyes instinctively turned. Fifteen miles of ice lay between the hut and the foot of this mountain, crowned with a glow that shone alluringly against the blackness. At times there were bursts of light, mysterious and amazing. There were still active volcanic forces beneath that ice-girt pile, juxtaposition that could not fail to rouse awe in the mind of the beholder. Shackleton wrote:

> We often speculated as to the course the lava stream would take and its probable effect on the great glaciers and snowfields flanking the sides of the mountain, should it ever overflow. These sudden uprushes were obviously the result of a vast steam explosion in the interior of the volcano, and were sufficient proof that Erebus still possesses considerable activity.

To the scientists in the party this mountain was a challenge. They itched to view it at close quarters and

THE "NIMROD" PUSHING HER WAY THROUGH OPEN PACK-ICE

From "The Heart of the Antarctic," by Sir Ernest Shackleton (Heinemann)

THE "NIMROD" HELD UP IN THE ICE

From "The Heart of the Antarctic," by Sir Ernest Shackleton (Heinemann) investigate its composition, and the honour of the leadership in the attempt to climb it naturally fell to Professor David, who had with him a supporting group under Adams, there being three in each group. The six were provisioned for ten days, and the forward party were to make every effort to reach the summit.

To do this meant hauling a sledge up the greater part of an altitude of more than 13,000 feet, and carrying heavy equipment, all of which added greatly to a task which in itself was no small undertaking. However, it was successfully carried out, and the party returned, full of scientific information, and having definitely ascertained that the height of the mountain is 13,350 feet above sea-level, and that it possesses at least four craters.

Week followed week in a routine of camp work, till the return of the sun on August 22 heralded a new phase of activity. Bitter winds were still blowing, but these were ignored; *the sun had come back!* And in the Polar regions daylight is the signal for toil; for there if anywhere it may be said that "the night cometh, when no man can work."

The car, having proved a failure excepting for short runs over really hard, smooth snow or bare ice, was ruled out for any extensive work. But four of the ponies had survived, and seemed likely to be of use. Preparations were therefore made for three great sledging expeditions, the ponies being reserved for the party going south in an endeavour to reach the Pole. This party, which was led by Shackleton himself, included Adams, Marshall, and Wild. A second party, aiming at the Magnetic Pole, consisted of Professor David and two others; while a third party was to turn west and investigate the mountainous part of Victoria Land—this enterprise being substituted for the exploration of the Ross Barrier region which Shackleton had been forced to lay aside as impracticable.

By the end of October all three parties had set off from the hut, leaving a faithful remnant to await their return, while pursuing necessary and important but less exciting work.

Professor David's party, consisting of himself, Douglas Mawson, and Alistair Mackay, left the camp at Cape Royds on September 19, 1908. Elaborate precautions were taken as to the means of rescue, in the event of the party not returning by the beginning of February. By that date the *Nimrod* was due back in the Antarctic, and in his instructions to Professor David on the departure of the expedition Shackleton wrote: "If by February 1 after the arrival of the *Nimrod* there is no evidence that your party has returned, the *Nimrod* will proceed north along the coast, keeping as close to the land as possible, on the look-out for a signal from you flashed by heliograph." As events turned out these precautions proved of the utmost value. As we have already remarked, it is always well to remember that in any long exploring journey which involves a return the road back is of even greater importance than the road forward.

Thus supported by the assurance that in the event of accident they had some sort of rendezvous, the three men moved off, to begin a coastal journey with the most varied scenery. They took no dogs with them, relying entirely upon their own pulling, and relying too upon finding seals as they went, the track chosen being for the first half of the journey close to the shore.

Although it was spring in the Antarctic, the weather was very bad, with stinging blizzards of snow that made progress slow, and sometimes stopped it altogether. The best moment of each day was at the evening meal when the three gathered round their Primus stove, to eat fried seal and drink hot cocoa.

To reach the Magnetic Pole they had to cross the difficult Drygalski Glacier, and while doing this they had to drag with them a load that, weighing at first a ton, was never less than half this weight. "The total distance travelled from Cape Royds to our depot on the Drygalski Glacier," writes Professor David, "was about 1260 miles. For the remaining 520 miles from the Drygalski depot to the Magnetic Pole and back we dragged a weight at first of 670 lb., but this finally became reduced to about 450 lb."

Three men, alone in a desert of snow, irritated to desperation by driving snow and suffering agonies from frost-bites, dragging an enormous load over all types of surface, the monotony of their toil broken only too often by narrow escapes at crevasses, their breath coming in jerks because of the rarity of the air, enduring all this willingly and even exultantly for the sake of accomplishing a task—this surely is a picture to stir the imagination of the most sluggish! To do all this, and then to come home quietly and modestly, boasting nothing of their achievement, here surely is greatness!

As long as the track followed lay by the sea food was plentiful, but once away from this area the ration problem grew severe. Three Plasmon biscuits would be laid out for breakfast, and with shut eyes a choice would be made. "Grievous indeed," says Professor David, "was the disappointment of the man to whose lot the thinnest of the three biscuits had fallen." Every crumb was carefully guarded, for to a starving man even a crumb is precious.

Having made a depot on the Drygalski Glacier, the three men pushed on into the interior with their lightened load. It seemed doubtful if they would ever reach their goal; wind and steep glaciers tried them to the utmost. By December 20 they were on the verge of giving up, when suddenly they struck a better patch, and on Christmas Eve, having reached an altitude of 1200 feet, their spirits responded, and the fairy flame of hope sprang afresh. Two thoughts filled their minds—food and their goal; but often enough the desire for food pressed so greatly that it became their one absorbing passion.

January 1909 found them still pressing on, and on the 16th they arrived at their objective, the exact spot being calculated as latitude 72° 25′ S. longitude 155° 16′ E. The Union Jack was planted, and Professor David declared aloud: "I hereby take possession of this area now containing the Magnetic Pole for the British Empire." The three men then gave three cheers for the King, after which they thankfully turned their faces toward home. "We were," confesses Professor David, "too utterly weary to be capable of any great amount of exultation"—a sentence of most eloquent brevity.

Their great object being accomplished, the chief concern of the three was now how to get back to safety. Between them and Cape Royds lay many miles of dangerous travelling, and if they were to arrive at the coast by February 1, in accordance with Shackleton's instructions, they would have to cover from sixteen to twenty miles of rough going each day, on most meagre rations. Nothing daunted, they pressed on, and none too soon, for food had been reduced to a few broken biscuits and bits of cheese, helped out by penguin flesh, when they reached a spot some three miles from the shore. Here they decided to camp in the hope of being found by the scouting *Nimrod*. Though none would confess it, the chance of rescue seemed woefully small, when, as if by a miracle, the ship appeared on the skyline before them.

The three men tumbled over one another in their eagerness to attract attention, and, when they had all but got to the ship over the rough ice that separated them, Mawson in his haste fell down a crevasse, and very nearly lost his life. Happily he was pulled up unhurt, and amid a babel of questions David, Mawson, and Mackay scrambled on board. A week later the three men were back in camp at Cape Royds, and thus ended a most gallant adventure.

CHAPTER XXXI

SHACKLETON'S FARTHEST SOUTH

WHILE Shackleton and his companions were battling their way to the south, and Professor David and his party were seeking the Magnetic Pole, the third, or "Western," party was proceeding to investigate further the Ferrar Glacier, which Captain Scott's party from the *Discovery* had discovered. This "Western" group consisted of Bertram Armytage, Raymond Priestley, and Philip Brocklehurst. Mr Priestley afterward served with the Northern Party of Scott's Expedition (1910–13), and both he and Sir Philip Brocklehurst were to see much service in the War.

The work of the party was much restricted because Shackleton had left orders that they were to stand by to join up with the Northern Party, should that party be compelled to retire toward its base. Fortunately no such contingency occurred, but Armytage did not feel justified in departing very far from the place of rendezvous. A geological and botanical survey was made of the lower reaches of the Ferrar Glacier, and early in January the men sat down to wait at Butter Point—so called after a tin of butter left there by Scott to fry seal in.

Here they very nearly perished through the unexpected breaking up of the ice, which left them stranded on a floe with a wide lane of water between them and safety. No loophole of escape offered itself until, happily, as their floe moved it drew near enough to firm ice to enable them to bridge the lane with their sledge. Scarcely had they crossed over to safety when the floe swept away to the north, in the direction of open sea, leaving behind three startled men, profoundly thankful at their escape.

Soon after this adventure they were picked up by the *Nimrod*, which was cruising round in search of Professor David's party, the date then being January 26, 1909.

Meanwhile, Shackleton's party also was encountering difficulties. They had reached their gallant farthest and were now on the way home, weak and starving. Their only hope lay in quickly reaching their depot on the Barrier. "The food is all finished but one meal," writes Shackleton. "No biscuit, only cocoa, tea, salt, and pepper left, very little of these also. . . . Very tired indeed."

Starting off in exhilarating weather, the party had high hopes of reaching their goal—an aspiration only relinquished at a point of absolute exhaustion. For the first part of the journey the ponies went well, but three weeks after setting out one had to be shot, and before half the distance to the Pole was traversed all four were dead. As far as latitude 83° S. unexpectedly good progress was made, but Shackleton observed with anxiety that the mountains trended eastward across his southern path. His fears were too well founded, and the march was delayed by the necessity of finding a path through the mighty ranges. Fortunately after very little delay a gap was found, and further progress was made up the greatest glacier in the world, later on named by Shackleton, after his chief supporter, the "Beardmore Glacier." The passage was not made without cost, Socks, the last of the ponies, being lost down a crevasse.

By December 23 Shackleton and his companions had ascended to a height of 8820 feet, but were still below the level of the Pole.. Each day was an agony of labour. Food was scarce; appetites were enormous; the night temperatures were horribly low; the wind was pitiless and incessant; and nearly every day one or other fell into a crevasse from which he had to be hauled out. Dragging heavy loads they continued to press on over a surface that Wild described as "like walking over the glass roof at a station." Christmas Day was memorable as a day when they had a full meal, and boiled pony, Oxo, cocoa, and a tiny plum-pudding made a great feast. At this date they had reached a point which involved a further journey of nearly 500 miles to the Pole and back to their Christmas camp. Could they make it on their short rations? It seemed doubtful.

January 1, 1909, found them in latitude 87° 6½′ S., or about 172½ miles from the Pole. By the 6th they had reached 88° 7′, at an altitude of more than 11,000 feet. "Never once," writes Shackleton, "has the temperature been above zero since we got on to the plateau, though this is the height of summer." The food they had was absurdly insufficient, and barely kept them going at all. It was quite clear that unless they were to perish in the snow they must turn about, and on January 9 this was done. "We have shot our bolt," says Shackleton, "the tale is latitude 88° 23′ South, longitude 162° East. . . . Homeward bound at last. Whatever regrets may be, we have done our best."

The march home was a long and terrible struggle. They were weak and famished, and at times it was as much as they could do to stagger along. On reaching the depot at which, on the outward journey, one of the ponies had been shot, they were so famished that, on finding some of the pony's blood frozen into a hard core, they dug it up and found it delicious, and, when boiled, not unlike beef-tea.

By the end of February all four were exhausted, and had suffered much from dysentery. Marshall was really ill. They were now near the coast, within sight of Cape Armytage, and their one hope was to catch sight and attract the attention of the *Nimrod*. The date was already much beyond the time they had given as likely for their return, and if the ship, having scoured the coast, had turned back without them then the situation was indeed a difficult one.

But when anxiety was at its height they were rescued. On March 1 they were safely aboard the *Nimrod*. The scene when the three groups of explorers were once more united may be left to the imagination.

After incredible adventures which had brought some of them within a hair's breadth of death they were all back on board their ship! It seemed like a fairy tale, too good to be true.

But there was little time for sentiment! If the ship was to get through before the ice closed she must hurry off. Everything was bustle and exertion, and on March 4 the *Nimrod* sailed from Cape Royds, this time without leaving a shore party behind. Before March was over the ship had reached New Zealand. In the Antarctic there had been no fragrant flowers, no trees, no grass, no running brooks, and these almost forgotten marvels enraptured the men. Added to this joy was the satisfaction which comes from consciousness of a task well done.

Shackleton had not succeeded in wholly realizing his ambition, but he had penetrated to latitude 88° 23′, or within a hundred miles of the Pole, and had brilliantly carried out a great and heroic undertaking. "It seemed," he wrote on reaching New Zealand, "as though nothing but happiness could ever enter life again."

CHAPTER XXXII

SCOTT'S SECOND EXPEDITION

"SOME," observes Shakespeare, "are born great." And of such was Captain R. F. Scott. Yet it may be questioned if the full nobility of his character would have been generally divined had he not perished in his great Polar attempt. His achievement is in itself immortal; but the story as told in his journals adds to the performance a poignancy that sets it apart. His story proves that in great exertions mind sustains endeavour long after the powers of the body have failed, and with him the goal became heaven's gate. "Man is a noble animal, splendid in ashes, and pompous in the grave": once again Sir Thomas Browne is justified of his wisdom.

Scott, after the return of the *Discovery*, was bent upon going back to the Antarctic, and this firm desire was gratified in 1910, when in command of the *Terra Nova* he set sail for the ever-frozen South. He hoped that on this occasion he would reach the Pole, but a twin aim was to carry out a scientific survey, and so he took with him an elaborate staff of scientists, each with his own specialist equipment. Such a staff would, of necessity, view exploration very differently from the seaman; what would be 'finds' to the specialist would often by the ignorant be regarded merely as of no account. But, however the scientists might differ from other members of the company, the expedition from beginning to end was marked by the utmost good comradeship.

The *Terra Nova*, on leaving New Zealand (November 26, 1910), almost immediately ran into very bad weather.

Day after day heavy seas swept the decks, leaving every one cold and miserable. Scott was particularly anxious about the ponies, dumbly enduring miseries thrust upon them by an unhappy fate. Amid all the misery of these days Scott kept a hopeful heart: "Hope dawns," he wrote, "as indeed it should do for me when I find myself so wonderfully well served." How much this sense of good-fellowship meant to Scott is seen again and again in his journal. He was prepared for any hardship, and could stand any amount of strain, but any hint of jealousy or backbiting fell upon his sensitive spirit like a physical blow. With the greatest happiness he records of their first season in the Antarctic: "A spirit of tolerance and good humour pervades the whole community, and it is glorious to realize that men can live under conditions of hardship, monotony, and danger in such bountiful good comradeship."

Owing to a heavy swell, Scott found it impossible to carry out his earlier plans for landing near Cape Crozier, and he therefore landed at Cape Evans, some twelve miles north of Hut Point, where the *Discovery* hut rested. The weather was bad, the ponies were a continual anxiety, but on the whole everything promised a successful enterprise.

On January 25, 1911, almost before the main party was settled in their new quarters, a second, subsidiary party, whose objective was purely geographical and scientific information, sailed from Cape Evans under the leadership of Victor Campbell.

The party consisted of six men and their aim was to be that still unknown region, King Edward VII Land. They carried with them the fullest and most carefully written instructions, and should the *Terra Nova* not be able to land them on King Edward VII Land they were to go ashore as far north as possible along the coast of Victoria

Land, make a detailed survey of their surroundings, and explore the great mountain range along that coast.

The journey was destined to be one of the strangest and most remarkable in Polar records. Two years were to pass before their return to Cape Evans, and they were to bring back with them such a tale as none could imagine. Had they known their fate before they started, their hearts might well have fainted. Mercifully, the future only becomes the present minute by minute.

Skirting cautiously along the Barrier, the *Terra Nova* looked for a spot upon which to land the explorers. They decided to try Shackleton's Bay of Whales, but on rounding the point to their surprise and dismay they saw a ship—the *Fram*—already in possession! Amundsen was there, strongly entrenched in an excellent camp—a party of nine men and 116 dogs. Visits were exchanged, and Amundsen told Campbell he was planning to get to the Pole, an intention of which Campbell heard with foreboding. From Amundsen's camp to the Pole would be a shorter journey than any route from Scott's camp, and the fine array of dogs seemed to promise success. After rapidly thinking it all over Campbell decided to return to Cape Evans with his information; then, giving up the King Edward VII Land plan, he would follow out Scott's alternative instruction and disembark near Cape Adare for the purpose of exploring Victoria Land. This change of plan met with the warm approval of the ship's captain, who was anxious to get back to New Zealand before the ice settled for the winter, and so the *Terra Nova* made for Cape Evans, where Campbell landed his two ponies—that great array of dogs having made him feel that the Southern party would need every pony they could get. At Hut Point he left a note with the news about Amundsen, and then the *Terra Nova* made for the north, finally landing the explorers on Ridley Beach, a little to the west of Cape Adare. Here they lived happily, and in comfort, their only visitors being battalions of penguins, who came inquisitively round the camp. Many of them paid for their curiosity with their lives, and were put in the ice-house for future meals. "It is brutal work," wrote Campbell, "for they are such friendly little beasts, and take such an interest in us; but they and the seals are our only fresh meat."

The confidence in man which marked the penguins was seen equally in the seals. Till the coming of the explorer seals had been entirely safe upon ice, their only foes being in the sea—in which they differ from the seals of the Arctic, who must always guard against the prowling Polar bear.

From the camp at Cape Adare as much sledging as possible was done, though the programme was restricted by stormy weather, which rendered the sea-ice treacherous in the extreme. The summer was spent in making a survey and in studying penguins, and on January 4, 1912, according to plan, the *Terra Nova*, returning from her winter quarters, appeared off Cape Adare. Men and stores were quickly aboard, and the ship was steered away with intention of anchoring some 200 miles farther south.

Light-heartedly Campbell's party stepped ashore north of Evans Coves, with three sledges, rations, and fuel for ten weeks, a spare tent, a few spare clothes and a spare sleeping-bag, together with a handful of luxuries such as chocolate, raisins, sugar, and cocoa. Little did those six men suspect that they were to be marooned on that bleak and bitter spot, with only a few weeks' stock of food, for many months. During all that long dreary time Campbell managed affairs with a courage worthy of Scott himself. When it was realized that the ship had failed to return, it became evident that if they were to survive they must have some sort of shelter. Campbell therefore quietly set about arranging for a winter home. The only material to hand was snow. In the interior of the only sizeable snow-drift upon the island they carved a small cave home, and into this dark hole, which did not anywhere admit of a grown person standing upright, these six men lived throughout an entire 'dark' season. Those few little food luxuries now became precious as pearls. For each man there was enough cocoa to provide a mug of very thin fluid five days a week; enough tea for a cup once a week. Once a week too each had a stick of chocolate; and birthdays were made memorable by a few raisins each. For the rest, they had a very small supply of biscuit, and such seals and penguins as could be killed. The worst point about the winter was the fact that the wind blew steadily at gale force without intermission for six months. Few seals came up, and, including the meat of these, the men were on half-rations throughout the winter.

FISHING IN THE ANTARCTIC
A hole is hewn in the ice through which a trap is let down into the water

It says much for the six men that all were able to survive the conditions in the snow *igloo*, and that after their incredible adventures all returned to camp, worn and famished, it is true, but safe and well. Light and warmth had been obtained in the hut by burning oil from blubber. In fact, by adopting Eskimo ways where no Eskimos existed they had saved their lives.

On October 2, 1912, it was decided to abandon the snow-hut and to endeavour to reach Cape Evans on foot. Before setting out the few spare pieces of clothing were divided. Everybody got something, and the luxury of even one clean garment may be imagined in view of the fact that each man had literally lived for nine months in one suit of clothes.

For nearly five long weeks the indomitable six struggled on over rough ice. The journey must have seemed an eternity. But they kept on, and on November 6 they reached Hut Point, where they found a note with sorrowful news of Scott. The next day they stumbled into the camp at Cape Evans, to the immense relief of their comrades, who feared that, like Scott, Campbell and his party had perished. But that they were alive, and very much alive, the dinner they managed to eat that first night conclusively proved!

CHAPTER XXXIII

SCOTT AT THE POLE

DURING the early months of 1911 Scott's main party at Cape Evans occupied itself in preparations for winter comfort in the hut and in laying depots to serve as larders when the long and arduous sledging journey to the Pole should be made. October was the month to which they pinned their hopes for this attempt, but the Antarctic winter must first be endured.

Well aware of the necessity for pressing forward with the provisioning of the depots, Scott lost no time in setting about this part of the work, and before January was over twelve men, eight ponies, and twenty-six dogs were off, dragging food and fuel to appointed spots along the route to be followed in the march toward the Pole. Two great depots were established, Corner Camp and One Ton Depot, and after immense labour 5000 lb. weight of stores was laid up for future use. Little did the men think as they turned away from One Ton Depot that not far from this spot Scott was presently to die for lack of food and warmth; that, within a few miles of plenty, he and those with him were to perish from hunger and cold.

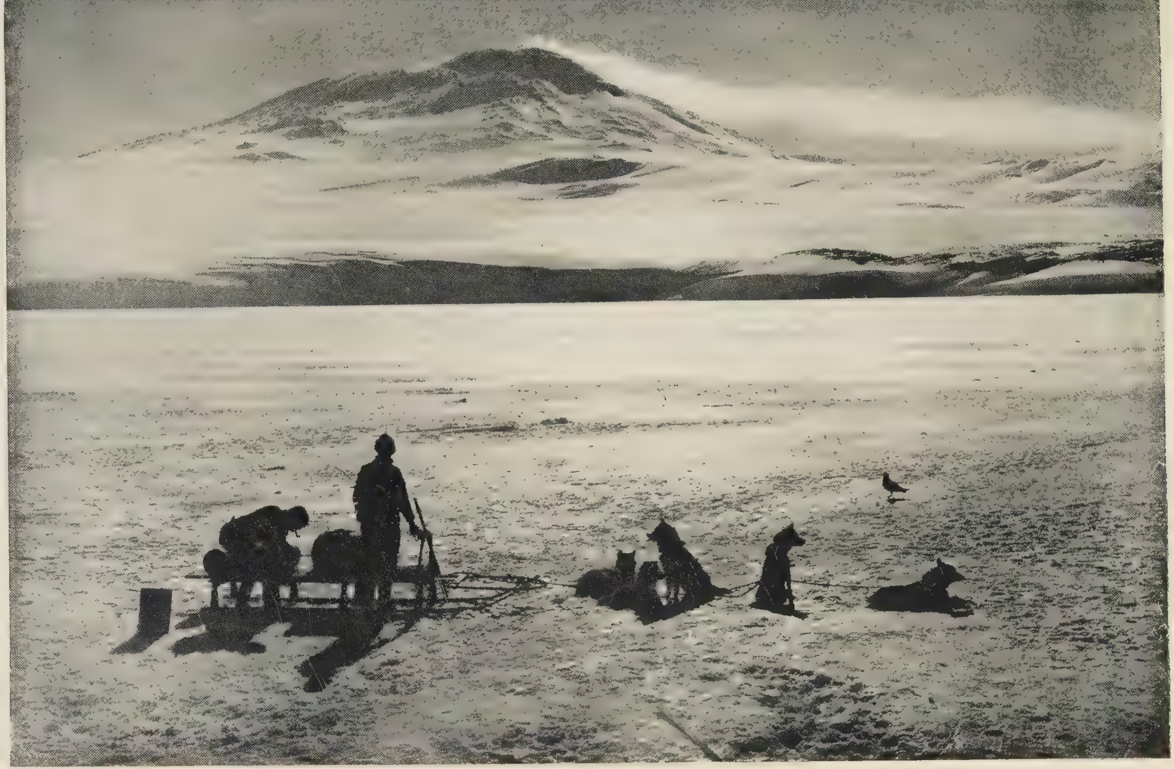
Even on this first occasion the journey back to camp was accomplished with difficulty. There were accidents with the ponies, and the spring Barrier temperatures were very low. The early part of the winter was necessarily spent in discomfort at Hut Point, waiting for the sea-ice to freeze and make possible the journey to Cape Evans. Darkness was now at hand; the worst period of the year was closing in upon them. Not till the return of the sun could the explorers hope to begin their march south.

However, while darkness fell upon the land, giving everything familiar a new and eerie appearance, within the hut it was warm and cheerful. Work and play were carefully arranged, and the long weeks passed quickly in a happy routine. Scott, looking round his large 'family,' felt well pleased. Never had there been a finer set of men; in this respect at least the equipment was perfect.

Whenever the weather was good enough excursions were taken, chiefly with the object of gaining fresh scientific knowledge. Of these journeys one of the most perilous was made to Cape Crozier by Dr Wilson, H. R. Bowers, and Cherry Garrard in June—an extremely cold part of the year. This expedition, which at one moment took a most thrilling and hazardous turn, was undertaken with the purpose of studying the habits of those extraordinary birds the emperor penguins, which have the strange habit of hatching their chicks at the darkest and most severe season of the year. At a time when in England and America people are thinking of holidays and tennis and bathing away in the Antarctic temperatures drop to −76° F. or even lower; and yet upon this ice-hard, iron surface these strange birds tend their young.

Leaving the hut at Cape Evans on June 27, 1911, these three men started off in a darkness that never more than half lifted, and in the face of relentless winds. At nights it was so cold that they got little sleep, getting warm for a few happy moments, and then shivering again in misery. But though their bodies were wretched, their spirits always bubbled. Nothing could daunt their courage—neither stinging weather, blistered toes and fingers, nor butter so hard that "it flew like brittle toffee."

At a height of 700 feet they built a hut of stone and snow, working often in the dark, for there was now little



MOUNT EREBUS SHOWING SIGNS OF ACTIVITY

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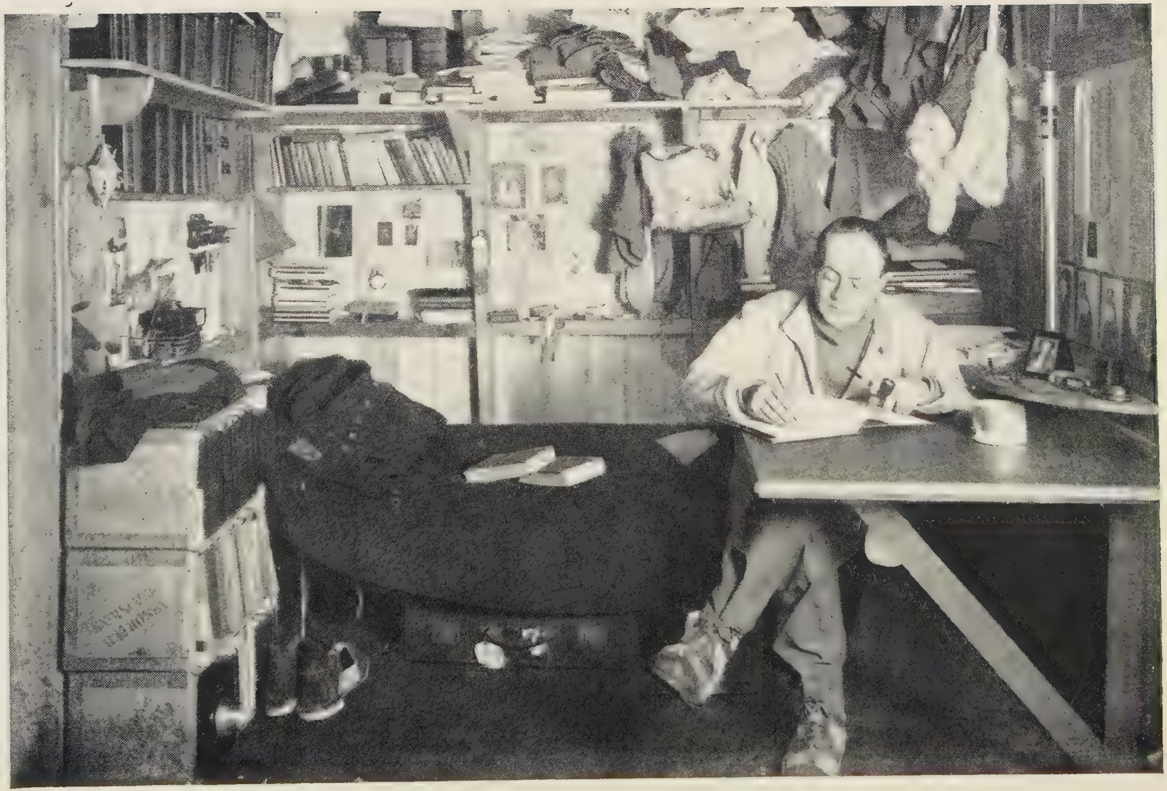
From "The Great White South," by Herbert G. Ponting, F.R.G.S., by permission of the author



CAPTAIN SCOTT WRITING UP HIS JOURNAL

daylight and very little moonlight either. From this shelter they set off on July 20 to inspect a rookery of the penguins on a cliff running down to the sea. They found far fewer birds than they had expected, but managed to secure a few eggs, and after a perilous climb up the face of the cliff they returned to their *igloo*.

Two days later the wind swept upon them, a blizzard of a kind before which man withers. The roof of the hut was taken bodily away, and the noise of the wind was so immense that only by shouting could they make themselves heard. The stove failed them, and for hours they lay in their sleeping-bags wet through and foodless, hardly expecting to survive. "I wondered," wrote Cherry Garrard in his diary, "whether it was really worth trying to keep warm. I confess that I considered we had now come to the end."

But they survived; and after the greatest suffering they arrived back in camp on August 1 to narrate a journey which Captain Scott deliberately declared "the hardest which had ever been done." Their survival undoubtedly owed much to the sublime faith of Dr Wilson, whose character in times of stress shone like a star.

During his journey to the Pole in October Scott wrote in his diary, "Words must always fail me when I talk of Bill Wilson. I believe he really is the finest character I ever met"—a judgment amply confirmed in the journals of all his associates.

With the return of the sun in August the thoughts of all were fixed on the great adventure south. Scott had high hopes of a successful attempt, but he had distinct fears of being forestalled. The note which Campbell had deposited at Hut Point in February 1911 had been picked up some few days later and Scott had learned with the utmost amazement that Amundsen (who was understood to be in the Arctic) was intending to try for the South Pole as soon as the weather should permit. "Every incident of the day," he writes, "pales before the startling contents of the mail bag which Atkinson gave me—a letter from Campbell setting out his doings and the finding of *Amundsen* established in the Bay of Whales."

Scott's mind was essentially sweet and generous, but it was also highly sensitive; and though harbouring no unkind thoughts to a rival in the vast Antarctic, the news obviously gave him a shock. From time to time in his diary are indications that he was troubled with forebodings. In March 1911 he writes: "The Pole is a long way off, alas!" And in April he refers vaguely to "the profound distrust with which I had been forced to regard our mysterious Antarctic climate."

But, whatever his uneasy fears, Scott's whole heart was in his expedition, and the use of the word "our"—"our mysterious Antarctic climate"—proves how deeply he had identified himself with his undertaking. On April 23, Shakespeare's birthday, when in England the hedges are bursting into leaf and beauty, the sun disappeared from Cape Evans. Twilight, faint moonlight, and the aurora australis were welcome breaks in the long monotony of darkness. For the most part the aurora displays in the South cannot compare in colour with those in the Arctic, but any lack of colour is made up for by the fairy delicacy of shimmering form, arousing ecstasy in the beholder.

With August the sun came back, and though blizzards still raged, daylight gave every one a feeling of spring. Preparations were pushed on, but bad weather, and accident after accident, held the party back. Throughout his calculations Scott could not forget that possibly Amundsen might forestall him. He wrote in December :

> If he gets to the Pole, it must be before we do, as he is bound to travel fast with dogs, and pretty certain to start early. On this account I decided at a very early date to act

> exactly as I should have done had he not existed. Any attempt to race must have wrecked my plan, beside which it doesn't appear the sort of thing one is out for.

Thus began a journey that was to stamp itself for ever on the minds of men.

Seasons are like human beings—they have their variations. Summer does not always mean warm weather, nor is winter necessarily cold. Scott, setting out on November 1, 1911, in what corresponds to spring in England and America, was faced from the first by unusually severe weather. Clouds of snow enveloped the party, the wind danced round them like a fiend, and the night temperature was –15° F. The ponies began to show sign of sickness, and this caused Scott much anxiety.

By December they had reached their twenty-ninth camp, but the weather was still "preposterous," and the conditions of marching "simply horrible." "Is there," asked Scott, "some wide atmospheric disturbance, . . . or are we merely the victims of exceptional local conditions? . . . No foresight—no procedure—could have prepared us for this state of affairs."

Delays and sharp cold naturally made great demands upon rations; the ponies appeared to be done, and at Camp 31 the last were shot, and a reorganized party, consisting of twelve men and three sledges, went forward. Ten days later the first supporting party was sent back, and from December 21 the expedition consisted of eight men and two sledges. By the end of the year they had reached an elevation of 9126 feet, and prospects were brighter; they had 170 miles still to go, and there seemed plenty of food. Scott confessed that for the first time he felt the goal was in sight.

On January 4, 1912, they were 150 miles from the Pole. Scott felt that the time had come when the party must be reduced still further, and he ordered back Evans, Crean, and Lashly, who reluctantly obeyed. The party was now reduced to Scott, Wilson, Oates, Bowers, and Petty Officer Evans, who with one sledge were to dash for the Pole. They were now on the summit of the plateau upon which the Pole is located, and by January 6 they had passed Shackleton's last camp, and were farther south than anyone had ever been—always supposing Amundsen was not in front. (He had, indeed, reached this latitude four weeks earlier.) In spite of their terrible struggle, the utmost concord prevailed among the five, and Scott found himself very happy. Through snow-storm and over terribly rough ice they pulled their load, sustained by the thought that the Pole was within their reach. On January 16 only twenty miles separated them from the goal of their intense striving, but, alas! they were greeted by a black flag, which announced unmistakably that another had won there first. "It is a terrible disappointment, . . ." wrote Scott. "All day-dreams must go: it will be a wearisome return."

Worn as they were by their great effort, the shock fell upon them with cruel force. They slept very little that night, and very early in the morning they set off on the last stage of what was now indeed a cheerless journey.

That night, January 17, they reached their goal, where they found Amundsen's tent and a note which stated that the Norwegian and four others had been there. Scott calculated the altitude to be about 9500 feet, though at latitude 88° S. the plateau had reached 10,500 feet. The Union Jack was set up, a photograph of Scott and his four companions taken, and then they turned to begin the 800-miles march home. Into Scott's mind crept an uneasy foreboding once more: "Now for the run home, and a desperate struggle. I wonder if we can do it."

Thus began that heroic march the fame of which is known throughout the world. Terrible winds beat upon them, and snow blizzards numbed and blinded them. "Is the weather breaking up?" wrote Scott. "If so, God help us, with the tremendous summit-journey and scant food."

But the most serious menace was the health of Evans, who was suffering badly in his hands and his nose. Worst of all, he had lost heart, and a serious fall on the glacier brought on concussion, which made him erratic and weak. The full story of that terrible time between the end of January and February 17—on which day Evans died—can never be known, but it must have been a nightmare to them all. Very sadly the four survivors struggled on from the camp where they left the body of their companion. In the mind of each the gravest fears were stirring, but outwardly they remained cheerful. Day after day the blizzards raged, and progress was woefully slow. The end of February was in sight, and the 'summer' was nearly over. This in itself gave rise to serious thought. Four men, weakened by heavy marching on scanty food, frost-bitten, disheartened—could they hope to battle through to the end? Yes, if they had enough food and fuel. But, without these, no.

On February 24 they reached a depot, hoping to find stores. There was one serious shortage, oil. This was a calamitous discovery, for without oil there could be no hot food, and without hot food they could not hope to sustain life in temperatures of −20° F. The outlook grew very black, and was made worse by the evident ill-health of Captain Oates. "Our fuel dreadfully low, and the poor Soldier nearly done," writes Scott on March 5. But two days later he adds: "Oates is wonderfully brave. We still talk of what we will do together at home."

Then came more blizzards and temperatures of −38° and −40°.

With superb courage they struggled on, Oates getting weaker and weaker. The brave fellow knew that his weakness was a drag upon his companions and that he was lessening their frail chances of winning to safety. One evening he walked out of the tent with the quiet remark: "I am just going outside and may be some time." He went to a hero's death, as all of them knew. From the scene of this sad parting Scott and his two remaining companions came to within eleven miles of One Ton Depot, having with them but two days' food and one day's fuel. Here they lay, waiting for the wind and snow to cease. But the blizzard raged pitilessly on, and within the tent all hope faded. The Spirit of the Antarctic appeared to be hounding down the humans who had dared to disturb those solitudes. But if hope had vanished love and courage endured. Wilson and Bowers died first, and when some months later their bodies were found the flaps of their sleeping-bags had been carefully pulled over them. But the flap of Scott's bag was open, and he lay with his arm across the body of Wilson, to whom he had been so closely drawn. They "were lovely and pleasant in their lives, and in their death they were not divided."

Under Scott's body was a case containing a number of letters which he had written with stiff, dying fingers to his friends. These will always be counted among the most precious things we possess.

Terrible apprehension was felt at Cape Evans when Scott and his party failed to reappear. Cherry Garrard and Demetri had, after great hardship, succeeded in reaching One Ton Depot on March 10, where they left ample food for Scott and his companions, so tragically near. The fearful weather that hindered Scott also drove upon Cherry Garrard and Demetri, and only with the utmost difficulty could they get back to camp. After this date it was hopeless to try to penetrate farther south, and the camp could but wait, enduring the strain as best they could.

When the dark season had passed an expedition at once set out, and in November the bodies of Scott, Wilson, and Bowers were discovered. All the personal belongings were carefully removed, and then above the bodies was built a great cairn of snow, surmounted by a cross.

Proceeding a little farther to a spot about where it was thought Oates would have fallen upon his last sleep, the men erected a smaller cairn and a cross bearing on it the words: "Hereabouts died a very gallant gentleman, Captain L. E. G. Oates, of the Inniskilling Dragoons. In March 1912, returning from the Pole, he walked willingly to his death in a blizzard, to try and save his comrades, beset by hardships."

THE GRAVE OF SCOTT AND HIS COMPANIONS

On February 12, 1913, the *Terra Nova* anchored once more in Lyttelton Harbour, New Zealand. With flags half-masted she steamed sadly in, without her commander. Thousands gathered on the landing-stage to greet her; their silence seemed to reflect the sublime quiet of the Antarctic, which held beneath its snows the bodies of those heroic men.

CHAPTER XXXIV

AMUNDSEN

WHILE Scott was preparing for his last great expedition to the Antarctic Captain Roald Amundsen, that fine Norwegian explorer, was preparing to make a new journey to the Arctic. He was already known as a fearless investigator of the region, and now contemplated sailing the *Fram* through the Bering Strait to the deep, ice-filled basin that lies at the North Pole—a region with which the *Fram* was already intimately acquainted. He sailed from Norway in August 1910, but, declaring that he had altered his intention, he changed his course and put into Madeira, and, having revised his equipment, he announced that he would now try for the South Pole.

Many reasons, no doubt, underlay this sudden change of plan, but it is fair to surmise that the knowledge that the English and the Japanese had both announced expeditions to the Antarctic aroused a sudden hot desire to enter the lists also, and if possible snatch the prize for his own country. He argued rightly that if he could achieve something spectacular he could raise the funds necessary for his Arctic expedition, a splendid geographical undertaking, which was richly rewarded. Thus, while many people pictured Amundsen steaming away to the North, the *Fram* was serenely pushing her way south, and the two expeditions that were to be so tragically interwoven crossed the "roaring forties" almost on the heels of each other, but with this difference, that, whereas Amundsen knew that Scott was making for the Antarctic, Scott had no idea that Amundsen had changed his plans and was now seeking an identical goal.

Amundsen's voyage south was accomplished with ease. The *Fram* had a noble history behind her; she had been well and truly built, and her homely lines, in so far as they ensured comfort and safety, were worth any amount of elegance. She had weathered many a peril, and she would weather many more. On this score Amundsen had no anxiety.

A CAVE IN A HUGE ICEBERG

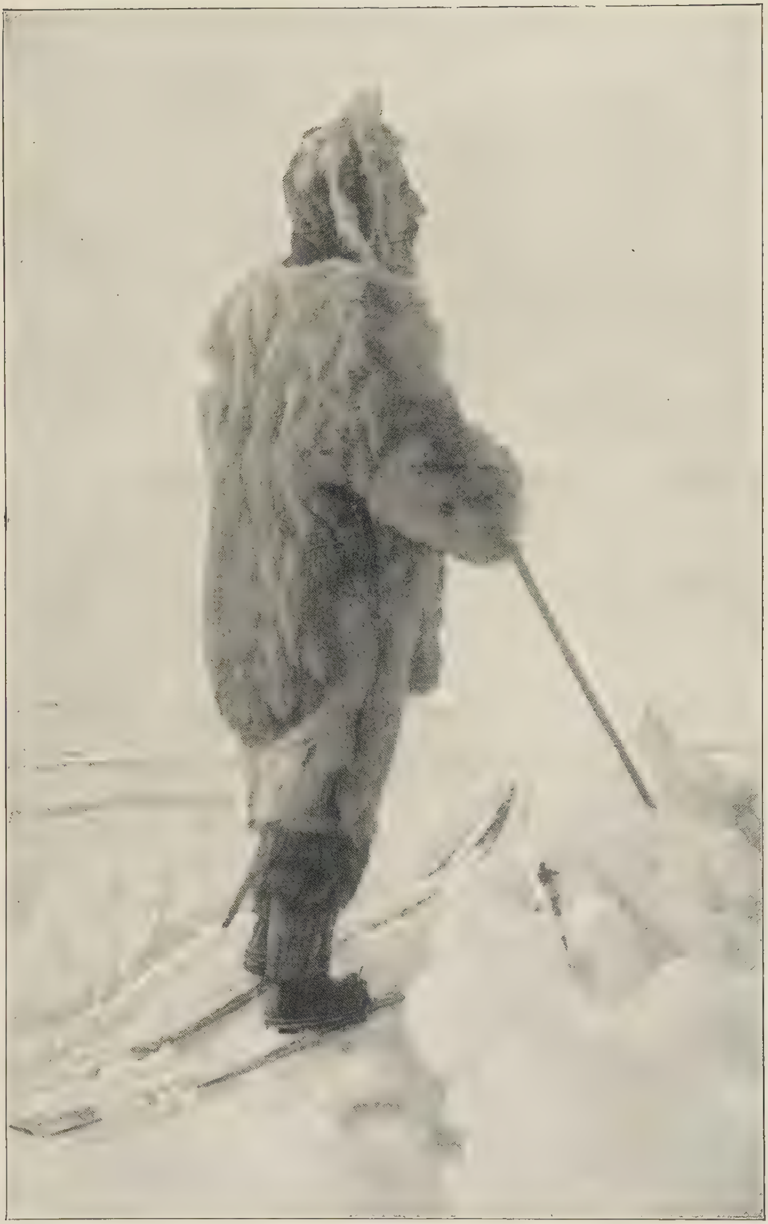
Having crossed the Antarctic Circle, the *Fram* was steered in the direction of King Edward VII Land, but the Japanese had declared their intention of working from this region, so Amundsen decided to pitch his camp on the great ice-barrier which runs between King Edward VII Land and South Victoria Land. This marvellous ice structure, which was discovered by Sir James Ross in 1841, had since been investigated by Scott in 1901, and by Shackleton in 1908. Shackleton, indeed, himself at one time contemplated making his base on the ice, but decided it was too dangerous.

Toward the particular bay discovered by Shackleton, and named by him the Bay of Whales, Amundsen now steered, with the object of securing a base that, while it would afford as short a route as possible to the Pole, should not overlap either the Japanese or the English. He said:

> I knew that the English would go to their old winter quarters in M'Murdo Sound, South Victoria Land. The newspapers had stated that the Japanese had reserved King Edward VII Land. Thus there was nothing else for us to do, but to build our hut on the barrier itself, as far from these two expeditions as possible, in order not to be in the way.

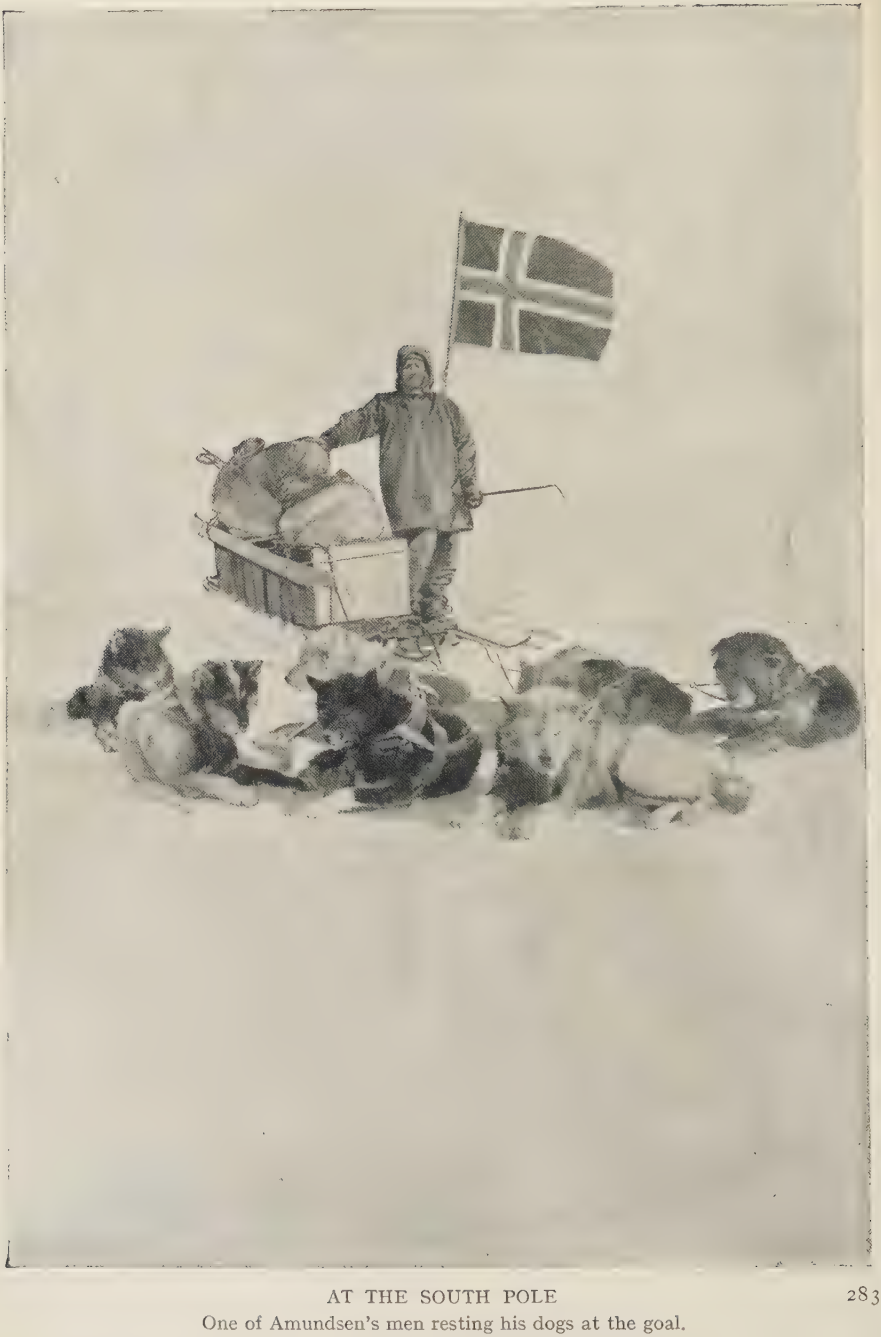
Thus it happened that the Norwegians settled their camp on the shores of the Bay of Whales, in which spot, Campbell, of Scott's party, arriving there a week or two later, was astonished to discover them. To find any camp at all here would have been a surprise, but that it should be Amundsen was doubly astonishing!

The hut set up and the stores landed, Amundsen threw himself into his undertaking with immense energy. To this he brought a clear and businesslike mind; the whole of his preparations, in regard to both the winter camp and depot-laying, were in every way admirable. Two qualities are of supreme importance in any undertaking such as this, efficiency and temperament, and in both these respects Amundsen was suitable for his job. He was magnificently thorough, and he was not hampered by the subleties of mind that harass the men they adorn. He spared no pains to keep both men and dogs healthy, and he looked to them to perform their work as efficiently as he had planned. From beginning to end the expedition was a superb machine which worked without a hitch, and it may safely be said that, although, as it happened, Amundsen was fortunate in having good weather and a route some fifty miles shorter each way than Scott's, the thing that really carried the scheme to its triumphant end was the careful planning that underlay it. Amundsen's experience in the Arctic was of great value here; he was much helped, too, by his knowledge of dog-teams, and by



AMUNDSEN IN POLAR KIT

From "The South Pole," by Roald Amundsen, by permission of the author



AT THE SOUTH POLE

One of Amundsen's men resting his dogs at the goal.

From "The South Pole," by Roald Amundsen, by permission of the author

the fact that all the men in his party were clever ski-runners. In fact, both in Peary's conquest of the North Pole and Amundsen's conquest of the South, experience proved more valuable than brilliance.

Having landed the men and stores and about a hundred dogs, the *Fram* returned to South America, leaving in the Bay of Whales nine men in a comfortable hut, with provisions for two years. These men were now divided into two parties; one was to stay in camp and finish settling in, while the remaining four men were at once to begin laying depots for the journey south.

So admirably was this work carried out that by April 11 no less than 7500 lb. of provisions had been stored in three great depots at 80°, 81°, and 82° S.—a work in which every member of the camp, except the cook (who was left behind to look after the camp), had had a share. Everything had gone well; the men were in sound health; the dogs were in good condition; and away out on the route to be followed in the summer were three great larders, each carefully marked out by flags five miles on every side, so that whatever depth of snow might fall they could be easily located. The temperatures on these three trips had been as low as −50° F., warning Amundsen of what he might expect in the winter, since March was almost 'summer.'

To prepare for the long Antarctic winter, Amundsen now organized a great seal hunt, and 120,000 lb. of seal meat were added to the stores. Fresh meat is one of the greatest preventives of scurvy, and Amundsen did not have a single case of this disease. "The health of everybody," he says, "was excellent. We had no physician, and we didn't need one." And so, in two camps, the one in the Bay of Whales, and the other in M'Murdo Sound, two groups of men, living in winter darkness, watched anxiously for the return of the sun, which should enable them to set out for the selfsame goal, upon a continent of 5,000,000 square miles, and of which only one hundred are free from perpetual ice. No easy travelling here! No well-kept roads! No cosy omnibuses for the weary! Through clouds of snow, and in the teeth of inhuman winds, they must go, mile after mile, over dangerous glaciers and jagged hummocks, up slippery slopes and across yawning chasms, before they reach the coveted spot.

On October 20 the Amundsen party set off—five men, fifty dogs, and four sledges. The way was not too easy, and every now and again they were faced with "grinning abysses." Fog hung over them, and they had to tread with the greatest caution. But by November 5 they had reached the depot at 82°, where they found plenty of food. Here they rested for two days, to give the dogs every chance. This was the last spot at which they would be able to pause before dashing for the Pole.

From 83° they began to sight peak after peak, and a great mountain range, with peaks from ten to fifteen thousand feet high, running from the plateau round the Pole to the north-east, in the direction of King Edward VII Land, revealed itself. Though glances were bestowed on these marvellous heights, attention was kept strictly to the south, which represented their goal. Before starting off from their hut (they called it "Framheim") Amundsen had laid it down that they would keep going due south, and not turn from the direction for any reason, unless forced to do so by obstacles they could not surmount. This resolution they steadily carried out, and in due time they began to ascend the Polar plateau, taking the due south course between the great mountain peaks. The snow-covered surfaces here often rose sharply and even on ski they were very difficult; as many as twenty dogs were at intervals harnessed to each sledge in turn. Up and down went the explorers, now ascending to 4000 feet, now coming down to half that level. But the dogs held out, and this was the salvation of the party. The glacier was hummocky, with great threatening cavities; on every hand lurked danger. Yet in spite of these conditions they travelled on one day seventeen miles, and climbed 5600 feet. By night they had reached 10,000 feet up. The dogs had performed marvels. "Their superiority," says Amundsen, referring to this day, "must once and for all be admitted."

Their work having been done, it was now necessary to kill these faithful comrades, and at "The Butcher's Shop," where the party lay sheltered for four days on account of blizzards, twenty-four dogs were shot.

As soon as the storm lessened and the sun shone out the party moved on. In front of them lay the Devil's Glacier, a treacherous, evil patch over which they marched in fear. Snow returned in blinding clouds to torment them, and fog hid the ground beneath their feet. "We saw nothing, absolutely nothing," comments Amundsen in a sentence that conveys much.

From this terrible stretch they emerged upon a flat plain with a fine sledging surface. Good Fortune herself now seemed to join their party, welcoming them with a happy gesture. For the last eight days of the march it was sunshine all the way, and they easily covered some fifteen miles a day. On December 13 they had reached 89° 37′, and on the fifteenth they came within sight of their goal. The five peered anxiously in front of them. Were they first? . . . It did not take long to satisfy them on this score. The snow was white and untrodden. They had won. The flagstaff with the Norwegian colours was solemnly planted, and the five men who had after great hazards reached the goal now took for their country the region surrounding the Pole and named it "King Haakon VII Plateau."

On December 17 Amundsen and his four comrades started on the journey back. Their health was good, the weather was kind, and, thanks to their depots, they had plenty of food. No one was hungry; there was always enough and to spare. Added to this they had the satisfaction of knowing they had been the first at the Pole, and, thus helped forward, they performed the journey in an amazingly short time. No less than 750 miles lay between the Pole and their camp on the Bay of Whales, and yet these five Norwegians accomplished the journey, safe and sound, in thirty-nine days, a superb athletic feat. Amundsen declares they felt well all the way—which certainly must have been the case, in view of the fact that the average daily march was rather more than nineteen miles over frozen and difficult ground.

How different from the fate of Scott's party, weakened by hunger, sickness, and disappointment, and making with difficulty some few miles each day! But the history of these two great journeys to the South Pole must always be twined together into one laurel wreath. True greatness knows no defeat. What may appear failure seen in another light is triumph. Amundsen had planned magnificently. No detail had been overlooked. Everything down to the last pin was perfect. He had too the temperament for the work—brave, resourceful, swift, ready to shed without regret whatever was no longer necessary, and able to keep his attention concentrated wholly on the object of his desire. "As Englishmen," declared Lord Curzon, before the Royal Geographical Society, "we do not grudge to a Norseman the success which is not inaptly won by the descendant of a race of born explorers and traditional pioneers."

CHAPTER XXXV

SHACKLETON TRIES AGAIN

THE winter during which Amundsen and then Scott reached the South Pole marks the climax of Antarctic exploration. The great objective having been reached, and investigation having proved the utter barrenness of the South Polar continent, further exploration was for the time being checked. There could be little hope of establishing an industry in such a region; business enterprise could look for no returns for outlay there. None but the born explorer adventuring out of the sheer desire for knowledge need expect to be rewarded by going thither.

The more honour, therefore, to those who attempt to unravel further the secrets buried south of latitude 60°. Among these expeditions was the Australasian Antarctic Expedition led by Douglas (later Sir Douglas) Mawson. Australia has always a special interest in South Polar discovery. Mawson, who had been with Shackleton in 1907, was now accompanied by Captain Davis, Frank Wild, and others. They sailed in the *Aurora* from Tasmania, and on arriving at Adélie Land they went ashore in what has become known as Commonwealth Bay. The work that followed is considered by experts to be among the best ever done. The explorers not only discovered the existence of many new coasts, but they also proved the non-existence of other territories that certain earlier, and less accurate, pioneers had believed to be there. " Sabrina Land," for instance, and D'Urville's "Côte Clarie," were found to have dream existences only. Among the new country found was Queen Mary Land.

The conditions under which Mawson's party carried out their splendid work are supposed to have been worse than any recorded up to that time. No wonder Mawson called his book *The Home of the Blizzard*, for the blizzard was continuous, with often a hundred-miles-an-hour wind. If the huts had not been deeply embedded in snow they would have been blown away. The most remarkable incident of the expedition was Mawson's journey with Mertz and Ninnis. Ninnis fell through a crevasse and was killed, Mertz died from exposure, and Mawson had to make a journey of a hundred miles alone before he could reach the food depot. Such an experience provides the best test of moral qualities. Mawson deserved all the fame and honours that came to him afterward, but he would value most the knowledge that no name is more respected among the men who have themselves been in Arctic seas.

Another expedition that became memorable was the courageous but unfortunate attempt by Shackleton in 1914. Starting on the very outbreak of the Great War, Shackleton was worried by the thought that his expedition might be misjudged. Immediately he learned that war had been declared he wired to the Admiralty offering himself and his company for service. To this message came back the order, "Proceed," and Shackleton therefore resumed his voyage. His expedition had been made possible largely by private subscriptions, and there were many reasons why his ships, the *Endurance* and the *Aurora*, should not be held up. Thus began a journey that had as its main objective the crossing of the vast southern continent.

Shackleton had planned like a Napoleon. His intention was to divide his party in January 1915, landing one group from the *Aurora* on the shores of M'Murdo Sound, not far from Scott's camp, while the main body, in the *Endurance*, was to make for the Weddell Sea, from the coast of which they were to make across the ice-continent to the Ross Sea. From this latter point the M'Murdo Sound party would in the meantime have laid depots as far as the sinister Beardmore Glacier. These depots were intended to provision the main detachment on the march across from the Weddell Sea; if all went well the two detachments would in time meet, and all would return together to the Ross Sea base.

It was a brilliant and ambitious scheme, but it was doomed to failure. Shackleton did indeed succeed in charting some new coast-line in the neighbourhood of Coats Land, which he named (May 20, 1916) "Caird Coast," but his great hopes one by one withered beneath misfortune.

Before the first winter closed the *Endurance* had been crushed in the ice in the Weddell Sea, and for months Shackleton and his men led a life of discomfort, being stranded on an ice-floe with very little food and only a few stores snatched from the *Endurance* before she sank under the ice.

Drifting slowly with the current, they lived on the ice-pack till, the ice breaking up, they were able to take to their small boats. After hairbreadth escapes they reached Elephant Island, where twenty-two of the party, under the makeshift shelter of an overturned boat, were left to struggle to support existence while Shackleton and five others, in a small boat (the *James Caird*), took their lives in their hands and set out on a journey of 800 miles across the wild Antarctic seas to try to find help.

Many a time these six men faced death in their small boat until at last they landed upon the island of South Georgia. Between them and the whaling-station on this island lay the hitherto untraversed interior. Three of the party being incapable of making further effort, Shackleton and the other two, leaving their companions in a rough sort of camp, set out to cross the island. After a journey so full of peril that, as Shackleton confesses, all felt that they were literally guided by an intangible Form, they reached the whaling-station during the forenoon of May 20, 1916.

DRIFTING ON THE ICE-FLOE

With friends to help them, the rescue of the three left on the other side of the island was an easy matter, and a boat was soon off on this mission. But to rescue the men on Elephant Island was a very different matter. Several attempts failed cruelly in the ice, and it was not until four months after that Shackleton and his five companions had set off for help that the *Yelcho*, a ship lent by the Chilian Government, was able to reach the strip of land from which the twenty-two derelicts had been looking out hungrily for a glimpse of a sail.

Shackleton, peering anxiously over the side of the ship, felt a burden roll away when in reply to his shout, "Are you well," the answer came back, "All well," and with feelings too deep for words he saw his men scramble aboard the *Yelcho*. Frank Wild, Shackleton's second in command, who had been left in charge, had spent himself in keeping up the spirits of the party; and there is no doubt that it was his vitality and hope that sustained them through those terrible months of waiting. Wild's courage never faltered. Every day he would call out to the party: "Roll up your sleeping-bags, boys; the boss may come to-day."

And then one wonderful day the "boss" did come; and there on the *Yelcho* stood Shackleton. "We intend," wrote one of them in his diary, "to keep August 30 as a festival for the rest of our lives."

These men having been landed safely in Chili in 1916, Shackleton's great anxiety was now to go to the help of the *Aurora* party. They too had suffered disaster. Early in the expedition their ship had broken from her moorings in M'Murdo Sound and drifted north with her crew, finally arriving at New Zealand.

Meantime the land party, which was led by Mackintosh, had faithfully carried out Shackleton's instructions, and all the depots had been laid in the arranged places. But sickness and hunger and bad weather had ravaged the party, and on some of their journeys they had come very near to sharing the fate of Scott. Mackintosh, who was so ill that, like a log, he was carried for days on a sledge by his heroic companions, was nursed back to health in their camp on M'Murdo Sound, but he and another most unhappily lost their lives in attempting to cross thin ice just before the rescue of the party.

Relief arrived on January 10, 1917, when the *Aurora*, refitted and overhauled, appeared once more in M'Murdo

SHACKLETON AND HIS COMPANIONS LANDING IN SOUTH GEORGIA

Sound. On February 9, with the survivors of the Ross Sea expedition aboard, she reached New Zealand, and the people of Wellington gave a warm greeting to these men who had fought their way so courageously through disaster. Shackleton's great attempt was over; it had failed to achieve its main objects, but it had been carried through with that heroic endurance of hardship that gives lustre to all great effort. Three only out of the company of fifty-six were lost during the expedition; of those who returned in safety from the jaws of the Antarctic several were afterward killed in the Great War, and many won decorations. At home the War overshadowed everything else. Even the most gallant expedition paled by the side of the news from the trenches. But now that time has moved on a little Shackleton's 1914–17 Expedition is seen as a true and gallant undertaking, with a place of its own in the history of the Antarctic. And in the story of that great struggle to reach the South Pole three names must for ever shine with imperishable glory—those of Shackleton, Amundsen, and Scott.

Of Shackleton no less than of earlier pioneers it can be said, if in a somewhat different sense, that he went on fighting to the end. He was now to make one more attempt, this time in the *Quest*. During his stay in England he had received the inspiration of a meeting with Stefansson. He sailed on September 24, 1920, delighted to find himself again going south. The *Quest* reached South Georgia on January 4, 1922, and anchored off Grytviken. They had been a long time reaching this point. Various delays had troubled them. Shackleton, too, had been unwell when he left home, and had later suffered from suppressed influenza. But, ill or well, he was determined to move on, for he realized that the lateness in arriving had considerably reduced the number of days available for exploration. He was busy completing arrangements for sailing, and had come on board to write his diary, when he died suddenly from heart trouble.

Only in a superficial sense of the word can this attempt be called failure. Once, writing home, he had quoted

> Never for me the lowered banner,
> Never the last endeavour.

The words make the true comment on the last effort of this invincible heart.

CONCLUSION

THE ADVENTURE THAT NEVER ENDS

MAN, having learned much, believes he knows all. Then, examining his store truly, straightway he finds himself in error. Whereas he had imagined himself rich, he now discovers his poverty; and before him in the dim distance lies a precious heap which he shall never finger. And the more he meditates the more clearly does he perceive that the secrets of the universe are still hidden from him.

Dost thou know the balancings of the clouds, the wondrous works of Him Which is perfect in knowledge? . . . Where wast thou when I laid the foundations of the earth? . . . Whereupon are the foundations thereof fastened? or who laid the corner stone thereof; when the morning stars sang together, and all the sons of God shouted for joy?

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